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New Orleans District

PATTERNS OF CHANGE IN PLANTATION LIFE IN POINTE COUPEE PARISH, LOUISIANA: THE AMERICANIZATION OF NINA PLANTATION, 1820 - 1890

September 1999

FINAL REPORT

VOLUME I OF II
Chapters I - X and Appendix I

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This report presents the results of data recovery excavations at Nina Plantation (Site 16PC62), a well-stratified antebellum and postbellum sugar and cotton plantation site; excavation of 4.4 ac (17.8 ha) has provided a significant amount of data relevant to understanding the plantation as a social, cultural, economic, and political unit. This extensive historic site mitigation included an ethnobotanical survey, a magnetometer survey, the excavation of seventeen trenches, totaling 297 linear meters (974 linear ft), and the removal of a total of 3,400 cubic meters of twentieth century alluvial overburden, exposing the midden deposits and architectural remains from the nineteenth century occupation of Nina Plantation. These remains included the nineteenth century plantation house and associated cisterns, a well, two domestic outbuildings, and the midden deposits associated with these plantation structures. The large main house had been raised on brick piers, but the two associated outbuildings had been built using a variety of early French colonial vernacular construction methods, *piquette en terre, poteaux sur solle,* and *poteaux en terre*. One of these structures has been identified as a detached kitchen that also served as quarters for domestic slaves and laborers. The other outbuilding also was a residence for household labor.

The stratigraphy of the site was well preserved, and included two major occupational middens, separated by a thick deposit of alluvium, attributed to a severe flood in 1851. This alluvium sealed the bulk of the antebellum cultural deposits, and acted as a temporal marker that extended across the entire site, making it possible to differentiate between construction sequences at the main house and the associated outbuildings. While the construction sequence was not as clear on the interior of the kitchen outbuilding, correlation between the alluvial stratum outside of the building, and the interior strata associated with the construction of a brick chimney foundation, enhanced understanding of the complex sequence of reconstruction events in the kitchen. Spatial and temporal pattern analysis has aided in recapturing the dynamic aspects of the plantation's landscape.

This report includes chapters detailing the geomorphology and floral, faunal, and climatic patterns of the site area, a contextual summary of the regional history, including a discussion of slavery and the plantation system in Louisiana, and a detailed review of land tenure and the documentary history of the site A review of previous archeological investigations at the site, and at other related sites in the region is included. The report contains detailed chapters on field and analytical methods, the research design, field results, analytical results, and the summary and interpretation of these data Finally, detailed appendices include all lists of all artifacts their provenience, and their attributes.

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PATTERNS OF CHANGE IN PLANTATION LIFE IN POINTE COUPEE PARISH, LOUISIANA: THE AMERICANIZATION OF NINA PLANTATION, 1820 - 1890

FINAL REPORT

R. Christopher Goodwin, Ph.D.
Co-Principal Investigator

By

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Susan Barrett Smith, B.A., and Ralph Draughon, Ph.D.

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Frank Vento, Ph.D., Anthony Vega, Ph.D., Elizabeth Scott, Ph.D., Michele Williams, M.A.,
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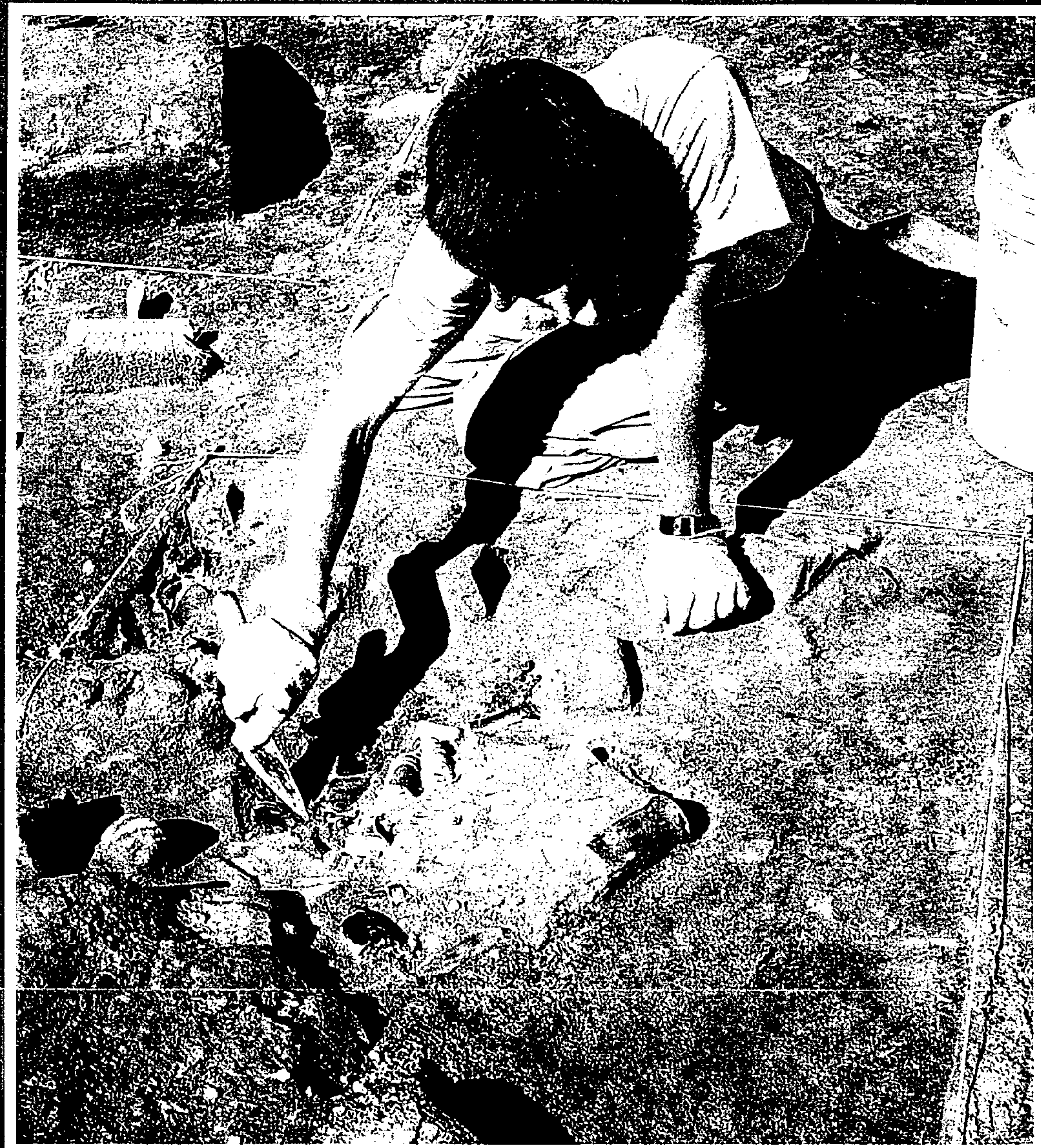

Excavations at Nina Plantation, Pointe Coupee Parish; photo courtesy of R. Christopher Goodwin and Associates, Inc., New Orleans and the U.S. Army Corps of Engineers, New Orleans District

Louisiana Archaeology Week
October 1–7, 1995

Archaeology Week has been made possible through funding from Kisatchie National Forest, U.S.D.A. Forest Service; the National Park Service, Department of the Interior; the U.S. Army Corps of Engineers; and the Louisiana Department of Culture, Recreation and Tourism, Office of Cultural Development, Division of Archaeology (504) 342-8170.

DEDICATION

This report is dedicated to the memory of Mr. Richard Supple Glynn, proud twentieth century owner of Nina Plantation, and to all the former residents of Nina/Pecan Grove Plantation. At least in part, their untold stories now live on.

ACKNOWLEDGEMENTS

R. Christopher Goodwin & Associates, Inc., would like to thank Mrs. Catherine Glynn Olinde, the owner of Nina Plantation, for the opportunity to work at the plantation. Mr. Kenneth Jewell, Esq., has provided liaison between Goodwin & Associates, Inc., and Mrs. Olinde, and we also are grateful for his help.

We would like to thank the U.S. Army Corps of Engineers, New Orleans District, for funding these investigations; Mr. Howard R. Bush, Contracting Officer's Representative, and Ms. Joan M. Exnicios, Co-Contracting Officer's Representative, provided valuable advice throughout the course of these excavations. We would also like to acknowledge Dr. Tom Eubanks, State Archaeologist, Mr. Duke Rivet, Ms. Claudia Holland, and Ms. Nancy Hawkins, all of the Louisiana Division of Archaeology, for their help and guidance during this undertaking.

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Dr. R. Christopher Goodwin was the Principal Investigator for the Nina Plantation project, and Dr. Ann Markell was the field director. Mr. William Athens, M.A., A.B.D. and Mr. Randall Primm, B.A provided much appreciated advice and assistance during the course of this project. Dr. Markell was assisted in the field by Co-Project Manager Stephen Hinks, M.A. and by supervisory personnel including Colby Child, B.A., Kathy Child, B.A., Johnna Thackston, M.A., Richard Wappenstein, B.S., Jeremy Pincoske, B.A., and Anna Norton, B.A. Archeological technicians included Dave Olney, B.A., Ben Fahy, B.A., Gary Gordon, B.A., Sonja Ingram, B.A., Katherine Woodcock, B.A., Alison Van Wagner, B.S., Catherine Boatner, B.F.A., Connie Darby, B.A., John Blackwelder, B.A., Michael Flynn, B.A., Derek Wingfield, B.A., Terrell Taylor, M.F.A., Bengt Hokanson, B.A., David Beard, M.A., Dan Warren, B.A., Ann Ballard, B.A., Kenny Wright, M.A., Tim Barton, M.A., and Paul Hughbanks, M.A.. The initial EDM survey was conducted by Mr. David Harris, Registered Land Surveyor, and later EDM measurements were taken by Stephen Hinks, M.A., David Olney, B.A., Jeremy Pincoske, B.A., and Ben Fahy, B.A.. Justine Woodward, B.A. conducted the ethnobotanical survey. The backhoe and the Cat 225 Excavator were operated skillfully by Mr. Bud Benton, of Pointe Coupee Parish. Mr. Benton also built the road into the project area, and helped to maintain it during the course of rains and floods, so that the project could continue.

Laboratory analysis was conducted under the general supervision of Dr. Markell. Overall Lab supervision was provided by Mr Clifford Brown, M.A., A.B.D. Michael Hoover, B.A. and Anna Norton, B.A. acted as project-specific supervisors, and conducted the bulk of the primary analyses. Heather Appolonio, B.A., Allen Green, and Angele Montana, M.S. aided in some analyses. Tom Fenn, B.A. conducted the analysis of tobacco pipes, and Michele Williams carried out he ethnobotanical analysis. Stephen Hinks and Michael Hoover analyzed the buttons, and Michael Hoover conducted the bead analysis. Washing, labeling, and flotation were carried out by the permanent and part-time laboratory staff of R.Christopher Goodwin & Associates, Inc. Assistance with the safe disposal of the Civil War hand-grenade recovered from the site, was provided by Major Dexter Accardo, Commander of Special Operations, Melvin A. Rein, and Jose M. Colmenares, Bomb Technicians, Jefferson Parish Sheriff's office.

The production of graphics for this report was under the overall supervision of Ms. Shirley Rambeau, A.A. Mr. Dave Courington, B.A. and Mr. Lynn Berg, B.A. produced the many maps, plans and profiles for the report. In addition, Mr. Courington was responsible for the translation and mapping of the EDM data. Ms. Faith Leech, B.A. took the photographs, and assisted with graphics production. Dr. David Reiss of Elmwood Industrial Medicine, and Danita Powers, X-ray Technician at Elmwood Industrial Medicine provided the x-ray of the handgun from Nina Plantation. Report production was carried out by Ms. Adele Bienvenu and Ms. Rebecca Riddle, B.A., under the general supervision of Ms. Christine Herman, B.A., Report Production Manager.

Finally, we would like to thank the occupants of Nina Plantation, and the residents of Point Coupee Parish, whose lives have enriched our own.

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CHAPTER I

INTRODUCTION

This report presents the results of Phase III data recovery excavations at Nina Plantation (16PC62), a nineteenth century historic archeological site located on the west bank of the Mississippi River near New Roads, in Pointe Coupee Parish, Louisiana (Figure 1). R. Christopher Goodwin & Associates, Inc., conducted Phase III archeological mitigation at Nina Plantation between October 1993 and September 1994, on behalf of the Army Corps of Engineers, New Orleans District, under Contract DACW29-93-R-0089. Data recovery was undertaken pursuant to and in accordance with procedures outlined in the National Historic Preservation Act of 1966, as amended; Executive Order 11593; the Archaeological and Historic Preservation Act of 1974; The Archaeological Resources Protection Act of 1979, as amended; Title 36 of the Code of Federal Regulations, Parts 60-66 and 800, as appropriate; the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation as published in the Federal Register of September 29, 1983; the Louisiana Division of Archaeology's Comprehensive Archaeological Plan of October 1, 1983; the Cultural Resources Code of Louisiana of June 1980; and the Advisory Council on Historic Preservation's Handbook entitled "Treatment of Archeological Properties" dated February 1981. Mitigation of planned impacts to the site was achieved by gathering a representative data sample from the site by addressing a variety of significant research questions, and by characterizing the cultural activity associated with nineteenth century occupation of the site.

Dr. R. Christopher Goodwin served as Principal Investigator and supervised all aspects of this study. Dr. Ann Markell and Stephen Hinks, M.A., served as Co-Project Managers; Dr. Markell also directed field investigations and the subsequent analysis of the recovered data, and she served as primary author of this report.

Site Description and Project Impacts

The archeological Site 16PC62, Nina Plantation, first was recorded in 1992 by Earth Search, Inc., during a cultural resources survey of the Grand Bay Revetment project right-of-way (Yakubik 1994). Subsequent to site identification, Site 16PC62 was tested and evaluated as eligible for inclusion in the National Register of Historic Places (Yakubik 1994:373). Testing and evaluation of the site consisted of the excavation of a series of judgmentally placed backhoe trenches designed to locate and identify a variety of intact cultural features. That investigation located both archeological features and deposits related to the main house complex, the slave/laborer's quarters, and the sugar mill. All but the sugar mill, which had been destroyed during twentieth century excavation of nearby borrow pits, appeared to remain intact beneath an alluvial deposit averaging 1 m (3.3 ft) in depth. Documentary research conducted by Yakubik (1994) suggested that the plantation dated from ca. 1820, and that it remained active in the same locale until the 1890s, when flooding and erosion forced the plantation owners to move the majority of the structures to the landward side of the newly constructed levee (Yakubik 1994).

Following a determination of eligibility for the National Register by the U.S. Army Corps of Engineers and the Louisiana State Historic Preservation Office, level testing, data recovery exca-

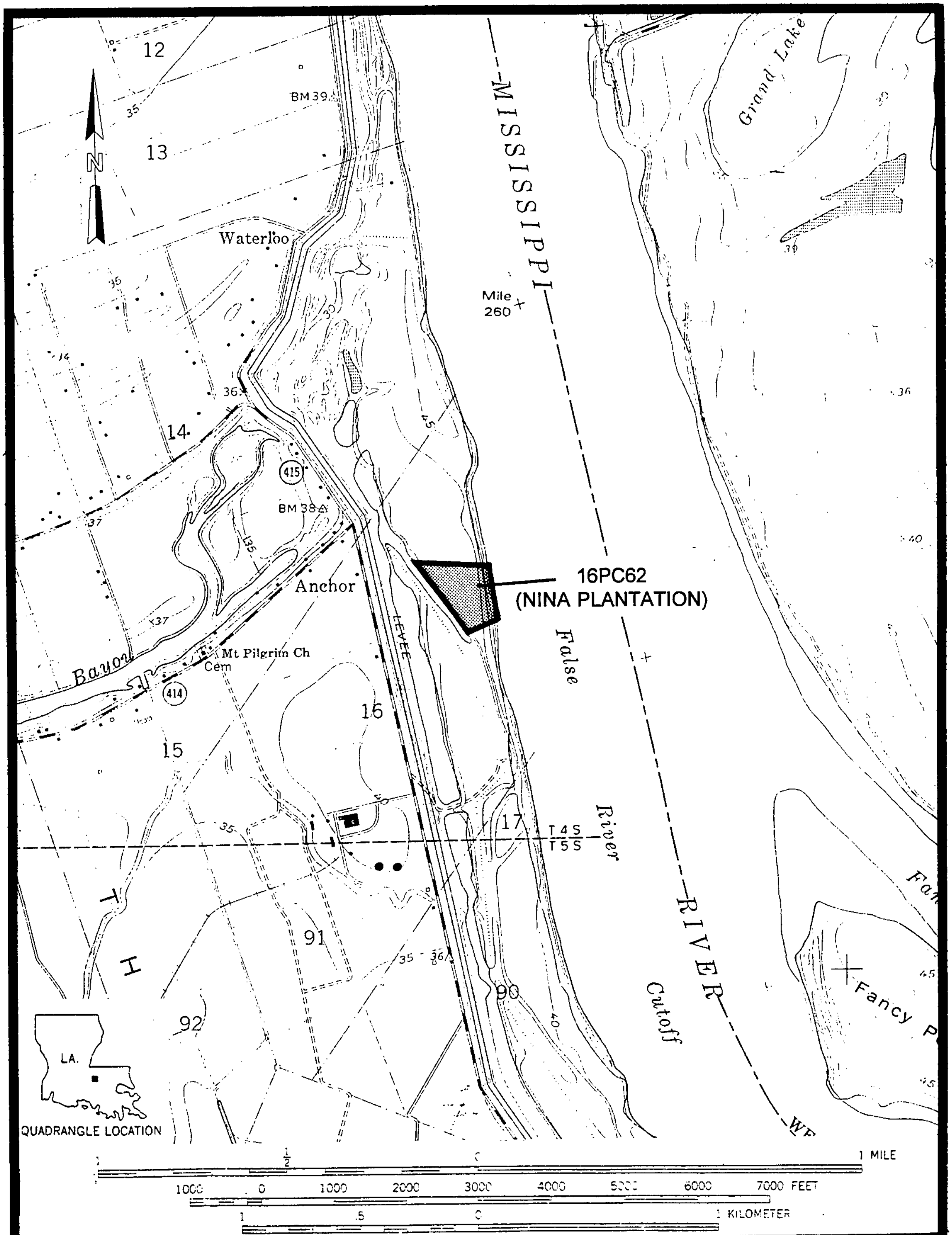


Figure 1. Excerpt from the 1963 Port Hudson, Louisiana USGS 7.5' topographic quadrangle, (photorevised 1994), showing the location of Nina Plantation (16PC62).

vations subsequently were conducted at Nina Plantation (16PC62) by R. Christopher Goodwin & Associates, Inc. Excavations, which began in October 1993, were undertaken in accordance with the modified Scope of Work agreed upon in February 1994 by Goodwin & Associates, Inc., and the New Orleans District. Modification of the original scope of work was intended to enable investigation of new and significant discoveries made by Goodwin & Associates, Inc., during the course of the 1993 data recovery efforts. During the final phase of data recovery, the main plantation house, comprised of an original core dwelling and two later wing additions, was delineated. In addition, investigations revealed the unexpected presence of at least two temporally and stratigraphically distinct midden deposits. The lower deposit was sealed by alluvium from a severe, mid-nineteenth century flood, and it appeared to date from the antebellum period; the upper or later midden dated from the postbellum period. Two antebellum period, earthfast outbuildings also were identified in the area south of the main house. Work under the modified contract was designed to address these important discoveries, and to recover data that would significantly enhance the interpretation of nineteenth century Nina Plantation.

These data recovery excavations successfully exposed the remains of the main plantation house and associated cisterns, a well, and two domestic outbuildings. One of these smaller, earthfast structures was identified as a detached kitchen that also served as domestic quarters, probably for the cook and her family. The other outbuilding was interpreted as a residence, possibly for household labor. Both outbuildings employed earthfast construction techniques. Middens associated with the occupation of both outbuildings and with the main house were identified as a result of these excavations, and temporal and spatial distinctions between these midden deposits allowed the current researchers to address a variety of diachronic and synchronic intra-site issues.

The Area of Potential Effect was defined in the Scope of Work (section C-2) as that portion of the Nina Plantation site located within 30 m (100 ft) of the top of the Mississippi River bankline. Those portions of the plantation that incorporated the slave/laborer quarters, and the industrial complex, were not included in the current project area, although the data recovered from the quarters area during the Phase II assessment have been considered in this interpretation of the data collected during the current project. The site plan (Figure 2) illustrates the location of the current project area, the reported data recovery efforts, and the probable locations of the slave/laborer quarters and the industrial components identified during the Phase II testing effort completed previously by Earth Search, Inc.

Research Objectives

The Scope of Work provided by the U.S. Army Corps of Engineers, New Orleans District, for data recovery at Nina Plantation defined three primary research issues. These issues included the examination of the material culture of planters and laborers living and working on a sugar and cotton plantation; a comparison of dietary residues from areas occupied by planters and laborers; and an examination of the spatial layout of the plantation structures.

The proposal for data recovery submitted to the U.S. Army Corps of Engineers by R. Christopher Goodwin & Associates, Inc. (1993), expanded on these research themes, and added temporal analysis of identified features to the list of research goals. The Phase II testing and evaluation conducted by Earth Search, Inc. (Yakubik 1994), suggested that there was little or no stratigraphic patterning at the site to allow for clear temporal differentiation of the associated components (Yakubik 1994:374). However, data recovery excavations provided evidence of clear stratigraphic patterning throughout most of the site area. For example, three distinct middens were associated with the main house and outbuildings, with the lower midden sealed or capped stratigraphically by a thick deposit of alluvium. Geomorphological and archival research, as well as subsequent artifact analyses, indicated that this alluvium was deposited by flood waters during the early 1850s. This alluvium sealed the bulk of the antebellum cultural deposits, and functioned as a temporal marker that extended across the entire site, making it possible to differentiate between construction sequences associated with the main house and the related outbuildings. For example, brick support piers from the north wing of the main house were constructed on top of this

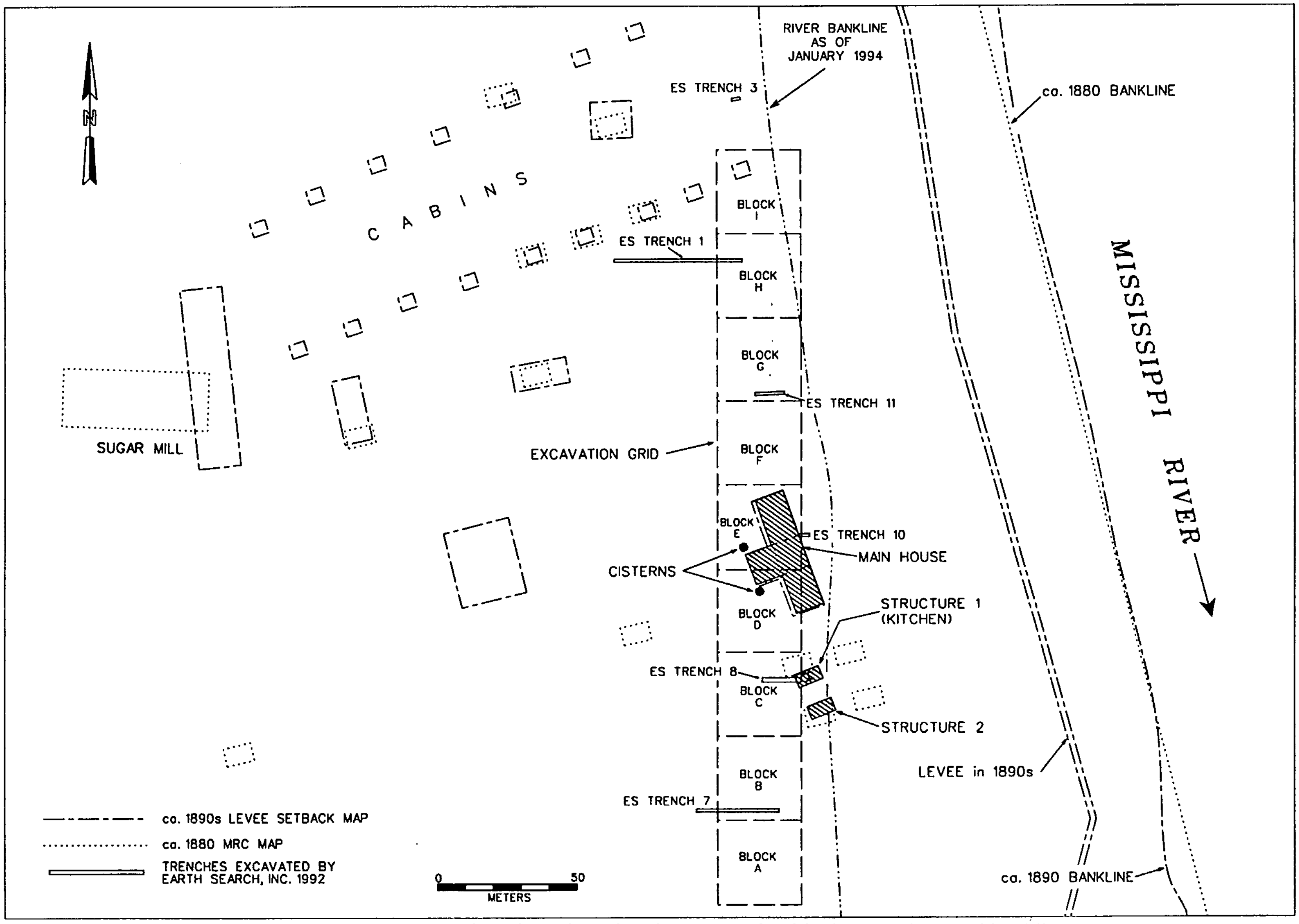


Figure 2. Plan of the Phase III project area at Nina Plantation, showing excavation blocks, trenches, and banklines.

alluvial stratum, while the bases of the piers of the original core of the main house were seated on sterile subsoil, well below this mid-nineteenth century alluvial deposit. While the construction sequence was not as clear during the excavation of the interior of the kitchen outbuilding, correlations between the alluvial stratum found outside of the building, and the interior strata associated with the construction of a brick chimney foundation, enhanced understanding of the complex sequence of reconstruction events in the kitchen. Spatial and temporal pattern analysis also aided in "recapturing the dynamic aspects of the Nina Plantation's landscape" (Goodwin & Associates, Inc. 1993:13).

Nina Plantation is a well-stratified antebellum and postbellum sugar and cotton plantation site; excavation throughout selected portions of the site provided a phenomenal amount of data relevant to understanding the development of the plantation as a social, cultural, economic, and political unit. Evaluation of recovered artifact assemblages and distributional patterns, as well as documentary analysis, analysis of structural remains, ethnobotanical analysis, geomorphological studies, and faunal analyses were used to reconstruct and study past cultural activities and interactions within the site.

Organization of the Report

The natural setting of Nina Plantation, a review of the geomorphological development of the region, and a review of the floral, faunal, and climatic patterns of the area, are contained in Chapter II. A summary of the regional history relevant to this project, and a discussion of slavery and the plantation system in Louisiana are contained in Chapter III. Land tenure history, and documentary historical background specific to Nina Plantation, are chronicled in Chapter IV. A review of previous investigations at Nina Plantation, as well as a review of archeological investigations both at historic sites in the vicinity of the project area and at plantation sites in Louisiana, is contained in Chapter V. A review of the research design, as well as a review of theoretical and methodological approaches to plantation studies in the southeastern United States, is contained in Chapter VI. The field and analytical methods employed in executing the project are described in Chapter VII. The results of data recovery at Nina Plantation are included in Chapters VIII and IX. A summary of results and interpretations associated with this data recovery effort is provided in Chapter X.

Provenience information, including tables describing features, units, and stratigraphic sequences, is included in Appendix I. The associated artifact inventories are contained in Appendices II, III, IV, V, and VI. The results of the faunal analysis are presented in Appendix VII, while the results of the botanical analysis are contained in Appendix VIII. The Scope of Work is included as Appendix IX, and an updated Louisiana State Site Form is provided in Appendix X.

CHAPTER II

NATURAL SETTING

Introduction

This chapter presents the natural context of Nina Plantation. It provides information on the natural setting that is essential to understanding the context within which the plantation operated, and to understanding of the taphonomic events which followed its demise. Data on climate, flooding, botanical, and faunal resources in the region are important for study of the agricultural choices made, the architectural patterns, the refuse disposal patterns, and for analysis of faunal and botanical data. In addition to the general geomorphological study which was conducted, a survey of existing flora was conducted prior to excavation. This survey was intended to determine the presence of any remnant species which may have escaped cultivation. This type of study is often fruitful in helping to determine early patterns of agriculture in a region.

Geological History

The Mississippi Alluvial Valley is the product of fluvial processes operating, at least, over the last 1.8 million years. Fluvial terraces associated with the tributaries of the Mississippi River in the uplands of western Tennessee clearly demonstrate that the Mississippi Alluvial Valley and its tributaries were established by at least the Early Pleistocene. Since then, eustatic changes in sea level and periodic influxes of glacial meltwater and sediments have caused the Mississippi River to entrench and aggrade repeatedly its alluvial plain. Because the valley has shifted laterally in location with each period of entrenchment, the Mississippi Alluvial Valley has widened significantly over time. Also, with each period of entrenchment, the Mississippi River entrenched its valley deeper relative to the surrounding uplands (Autin et al. 1991:554-555). As a result, along most of its length, the valley is at its widest.

<u>Wisconsinan Stage</u>

During the Wisconsinan Stage, 35,000 to 10,000 years ago, continental glaciation caused sea level to fluctuate by several tens of meters below modern levels. The lowest stand of sea level occurred between approximately 22,000 to 17,500 years ago, when sea level dropped as low as 100 m (330 ft) below modern mean sea level. This low stand of sea level caused the Mississippi River to entrench its valley at least as far north as the latitude of Baton Rouge, and near the project area (Saucier 1981:14-16; Saucier and Smith 1986:739; Schumm and Brakenridge 1987:236).

Available evidence indicates that the Wisconsinan alluvial plain within the Mississippi Alluvial Valley consisted of a series of extensive braidplains. Braided streams carrying large quantities of glacial meltwater flooded these braidplains; however, during the fall and winter, there only were dry expanses of alluvium occupied by a few narrow streams (Saucier 1981:14-16; Saucier and Smith 1986:739; Schumm and Brakenridge 1987:236).

Saucier (1981) and Saucier and Smith (1986) suggest that the Mississippi Alluvial Valley never was cleared completely of sediments during this low stand of glacial sea level, as dramatically illustrated by Fisk (1944). Rather, it always was filled partially with a thick sequence of coarse-grained, fluvial sediments consisting mostly of sandy and gravelly glacial outwash. The erosional unconformity that forms the base of

the Mississippi Alluvial Valley originated not as the result of the formation of a dendritic stream network, but rather as the result of coalesced channel scouring and lateral planation by both braided and meandering fluvial systems (Schumm and Brakenridge 1987:236).

Saucier (1981) and Saucier and Smith (1986) imply that during the period from 12,000 to 7,000 radiocarbon years ago, the Mississippi River filled its alluvial valley and created a series of discrete flood plain surfaces that remained stable for periods of hundreds of years. The surface of the alluvial plain dating from approximately 12,000 radiocarbon years ago would lie at shallow depths beneath the surface of the modern alluvial plain. At the latitude of the project area, this surface would lie about 25 m (82 ft) below the modern alluvial plain. Because the presumed depth of this surface lies above the 30 to 35 m (98 to 115 ft) depth of cutbank erosion, later meander belt development would have destroyed any Wisconsinan fluvial, and definitely any Early and Middle Holocene deposits within the project area (Saucier 1981:10).

However, it is unlikely that the Mississippi River alluvial plain constantly aggraded between 15,000 years ago to present. The Mississippi River changed from a series of braided streams to a meandering river regime starting approximately 12,000 years ago at the latitude of Baton Rouge, Louisiana. The transition from braided streams to a meandering river may have involved alternating periods of fluvial erosion and deposition resulting in substantial degradation and aggradation of the valley floor (Autin et al. 1991:561).

As a result of the substantial degradation and aggradation of the valley floor during the Late Wisconsinan and the Early Holocene, significant destruction and burial of the terminal Wisconsinan and Early Holocene archeological record might have occurred. Detailed research concerning the subsurface stratigraphy and sedimentology of the alluvial fill within the Mississippi River valley will be needed before a clear picture of its Late Wisconsinan and Early Holocene history can be reconstructed and predictions concerning the potential occurrence of archeological deposits can be made.

Holocene Epoch

At the transition from braided to meandering fluvial systems, the Mississippi River occupied at least five different meander belts during the Holocene Epoch (Figure 3). The project area lies within the youngest of these meander belts. As currently accepted, details concerning the chronology, river courses, and chronology of older meander belts are provided by Autin et al. (1991:562) and Saucier (1981:16). Saucier (1974, 1981:16) and Saucier and Snead (1989) depict the distribution of the remnants of each meander belt and their associated courses (Figure 3).

Prior to 2,800 years ago, the meander belts of the Mississippi River lay along the western wall of this stretch of the Mississippi Alluvial Valley (Figure 3) (Saucier 1981:16). At that time, the project area likely consisted of a poorly developed drainage network and backswamp. Prior to 2,000 years ago, the backswamp had buried completely terminal Wisconsinan braidplains, and possibly an unnamed meander belt of unknown association. Saucier (1969) mapped fragments of such a buried meander belt adjacent to Meander Belt No. 1 within West Baton Rouge and Iberville parishes and adjacent to the project area (Saucier 1974, 1981).

By about 2,800 years ago, the Mississippi River established its present course and Meander Belt No. 1 by channel avulsion. After the channel avulsion, the newly created channel slowly extended itself along the eastern valley wall of the Mississippi Alluvial Valley. This nonmeandering channel slowly incised its thalweg into the underlying backswamp deposits, building a low and relatively confining levee during the next few hundred years. As flow increasingly diverted into this course, the channel dug deeper into the underlying fluvial sediments, and continued to build the natural levee. Eventually, incipient meander loops developed along this course as small twists and turns in the channel. This was a period of rapid aggradation, because the flow was unconfined and levee overtopping was common as a result of its low elevation (Farrell 1989:159-164).

Soon after the diversion of the full flow of the Mississippi River into Meander Belt No. 1, its channel became fully developed and its natural

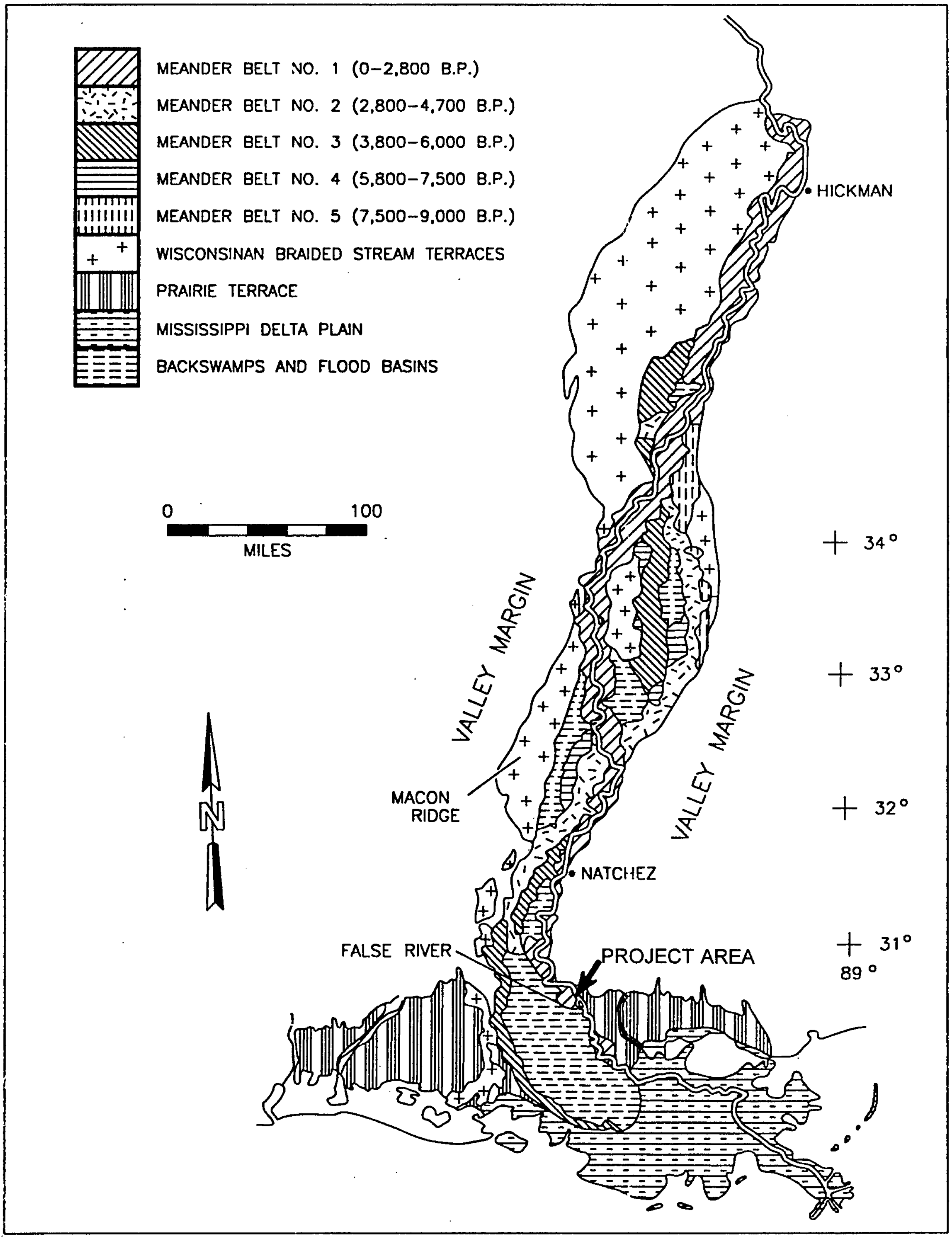


Figure 3. Mississippi River meander belts formed during the Holocene (adapted and redrawn from Autin et al. 1991; Kesel 1986).

levees achieved their highest elevation. As the meander belt became wider and the natural levees became more confining, the deposition of sediments on the natural levee became concentrated on the concave side of the meander loop. Also, the height of the levees prevented floodwaters from uniformly overflowing and submerging the entire levee. These high levees restricted the flow of flood waters across the natural levees to crevasses, resulting in the development of crevasse splays. As a result, most of the natural levee was high and dry during a typical annual flood (Farrell 1989:164).

With the establishment of full flow within Meander Belt No. 1, the Mississippi River started to migrate back and forth. This back and forth lateral migration has completely reworked the upper 30 to 35 m (100 to 115 ft) of the alluvial plain within the project area. As the river course migrated, its cutbank removed the upper 30 to 35 m (100 to 115 ft) of the alluvial plain, while a point bar and natural levee deposits accumulated along its convex bank. As a result, backswamp, meandering river, and braided stream sediments older than 2,800 years have been removed completely and backfilled with younger sediments to form the modern surface of Meander Belt No. 1.

Remnants of older meander belt surfaces and deposits may occur as isolated patches within Meander Belt No. 1. These small patches of older meander belt deposits and surfaces escaped destruction because of the geometry of intersecting meander loops. As a result, rare patches of fluvial sediments and associated archeological deposits that predate Meander Belt No. 1 might occur within them (Whitney Autin, personal communication 1991).

Specific Geology and Geomorphology

Nina Plantation lies entirely within the modern meander belt of the Mississippi River, and along the eastern side of the Mississippi Alluvial Valley. This meander belt has been designated Meander Belt No. 1 by Autin et al. (1991). Meander Belt No. 1 is a constructional landform consisting of fluvial landforms created by active lateral channel migration and vertical accretion of the Mississippi River while occupying a single, set channel course (Saucier 1974:10-11). The general assemblage of constructional fluvial landforms that characterized the surface of this and other Mississippi River meander belts include point bars, natural levees, crevasses, and abandoned meander loops (Saucier 1969).

The project area lies within the eastern portion of Meander Belt No. 1, along the natural levee of the Mississippi River. Meander Belt No. 1 attains a maximum width of 19 km (11.8 mi) and narrows to a minimum width of 3 km (1.9 mi). Meander Belt No. 1 contains the active channel of the Mississippi River, its associated point bar deposits, and a prehistoric, abandoned channel segment that contains the False River, Lake Clause, and their associated point bar deposits. On the opposite bank of the river, point bar deposits occur proximal to the active river channel, while deposits of the Prairie terrace occur immediately to the east.

West of Meander Belt No. 1, backswamp sediments comprise the Mississippi Alluvial Plain. The backswamp, or flood basin, is that portion of the alluvial plain that consists of swamps, lakes, or a combination of both. Environments in the backswamp zone consist of infrequently flooded forested bottomlands to permanent lakes and swamps. The abandoned meander loops of the False River and Lake Clause are deeply entrenched into these backswamp deposits. As noted by Saucier (1969; 1974:11-12), long, narrow natural levee systems of crevasse distributaries extend into the backswamp from the banks of both channel segments into the backswamp from the main natural levee of the meander belt.

The project area consists of a short linear strip of natural levee, situated along the west, or right descending bank of the Mississippi River. Currently, the site is bounded to the east by the Mississippi River and to the west by a man-made levee competed during the 1930s. Prior to 1890, a series of man-made levees were constructed between Nina Plantation and the active river channel. The natural levee lies at 9 m (30 ft) above mean sea level.

Stratigraphy

As noted above, six distinct stages of meander belt development are recognized within the Lower Mississippi River Valley. Meander Belt No.1, which occurs within the project area, is the youngest of the six identified meander belts. Meander Belt No.1 formed when the Mississippi

River abandoned the eastern Stage 2 channel in the Yazoo Basin area, and full-flow was shifted to the western channel (Saucier 1994). This event at approximately 2800 yrs. B.P. essentially marks the beginning of the Stage I channel and initiation of the modern meander belt.

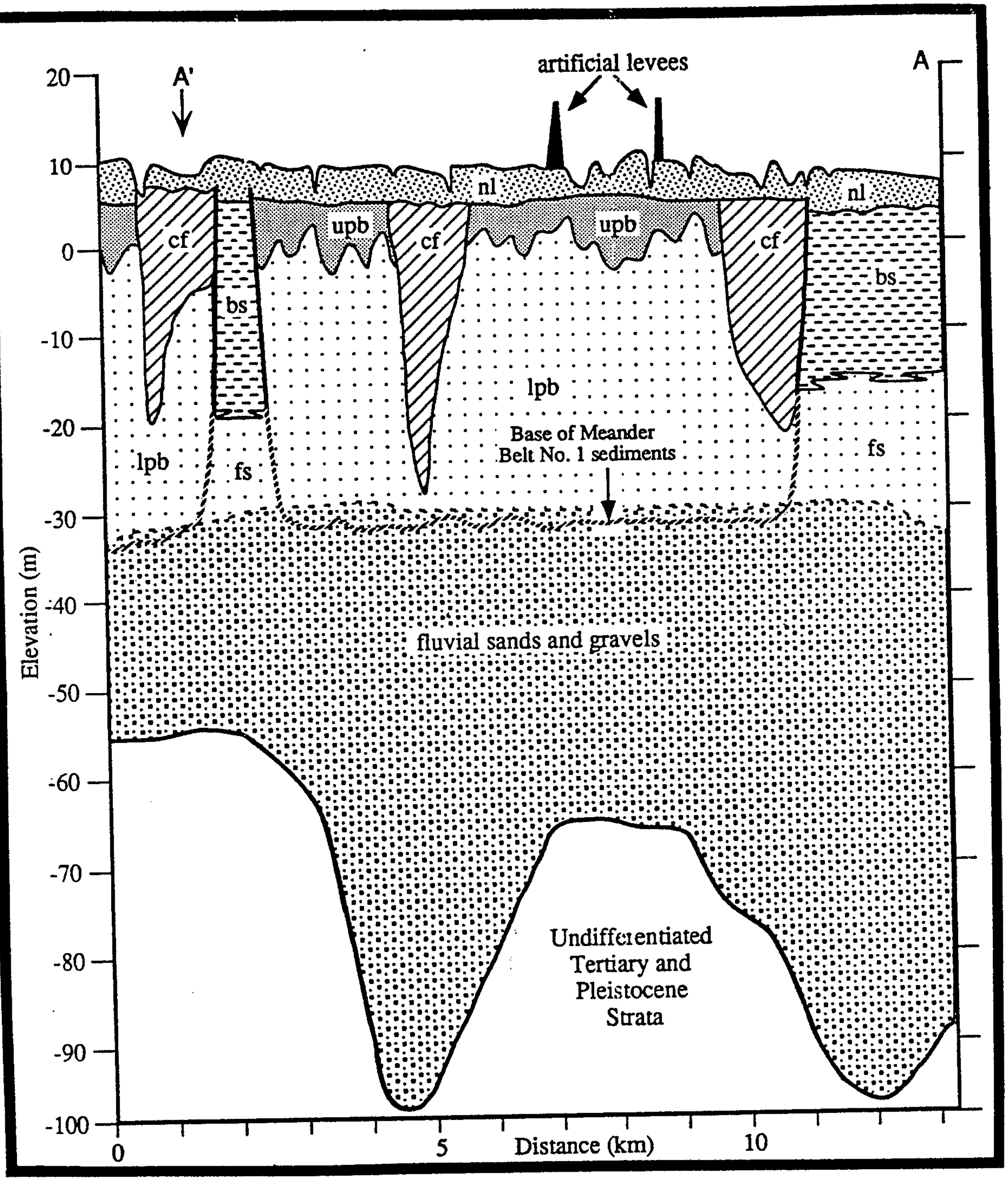
Meander Belt No. 1 represents the surface of an unnamed allostratigraphic unit created by the lateral migration of the Mississippi River. The North American Commission on Stratigraphic Nomenclature (1983) defines an allostratigraphic unit as "a mappable body of sedimentary rock or unconsolidated sediments that is defined and identified on the basis of bounding discontinuities." A meander belt is the surface of an allostratigraphic unit consisting of a basal bounding discontinuity, an upper bounding discontinuity, and a body of fluvial sediments that lies between the bounding discontinuities. Typically, the upper bounding discontinuity consists of either an exposed or buried meander belt. In the case of meandering system, the fluvial sediments lying between the unconformities consist of a lower part composed of point bar sands and gravels, overlain by finer grained and vertically accreted natural levee and overbank sediments. The basal bounding discontinuity is an erosional unconformity formed by the scour at the channel bottom, and at the edges, by cutbank erosion. Outside of the meander belt, natural levee deposits extend onto and interfinger with the adjacent backswamp sediments (Fisk 1947).

Sedimentary Processes

Within the Mississippi Alluvial Valley, the formation and sedimentology of meander belt landforms and sedimentary facies that form them have been studied intensively. A comprehensive review of the sedimentologic and geomorphologic processes that form meander belts, backswamps, and the sedimentary deposits associated with them, can be in Galloway and Hobday (1984); Farrell (1989) clearly explains the fluvial processes important in the formation of meander belts and their associated sediments, e.g., chute and neck cut-offs, lateral accretion, and the formation of natural levees by the Mississippi River. Finally, Coleman (1966) and Farrell (1989) clearly describe the depositional processes, land forms, and associated sediments common to typical backswamps.

Within the project area, the lateral migration of the Mississippi River channel concurrent with point bar formation has been the dominant process responsible for the creation of the meander belt within which the project area lies. The active erosion of the concave bank, called the "cutbank" of the river channel, causes lateral migration to occur (Figures 4 and 5). This erosion causes the cutbank to become oversteepened and, eventually, to cave into the river because of undercutting and scouring at the base cutbank and within the river channel. This caving of the cutbank results in the river channel shifting from its former position. As the cutbank periodically shifts, sand and silt are deposited contemporaneously on the opposite convex bank, or "point bar," thereby causing both banks of the river to shift simultaneously. As lateral migration occurs, the bends of the channel enlarge and form a meander loop. This meander loop eventually will become "cut off" from the river as its upstream and downstream arms migrate and coalesce at the neck of the loop (Fisk 1944, 1947:10).

Once the surface of the point bar is formed, overbank sediments quickly bury it (Figures 4 and 5). Sediment-laden waters overflowing the banks of the Mississippi River during flood events deposit these sediments on the flood plain situated adjacent to the outside bank. Because these sediments accumulate on the flood plain outside, and hence "over" the banks of the Mississippi River, they are termed "overbank" sediments. Upon overflowing the banks of the Mississippi River, the floodwaters spread out across the flood plain. Because the floodwaters are no longer confined by channel banks and perhaps, due to the baffling effect of flood plain vegetation, their velocity abruptly decreases. As a result, the sediment suspended within the water rapidly settles out. The sand and silt settle near the channel margin, and fine silt and clay settle further away between river channels within the backswamp. During a flood, the net result is the rapid accumulation of sediment along the channel margin; this creates the stable ridge called the "natural levee" and results in slow, periodic accumulation of fine-grained sediments within the back-



bs = Backswamp
cf = Channel fill
fs = Fluvial sands
lpb = Lower point bar sands
nl = Natural levee
upb = Upper point bar sediments

Facies contact
Erosional contact
Inferred erosional contact
Gradational facies contact

Figure 4. A stratigraphic cross-section of the project area (adapted and redrawn from Saucier 1969).

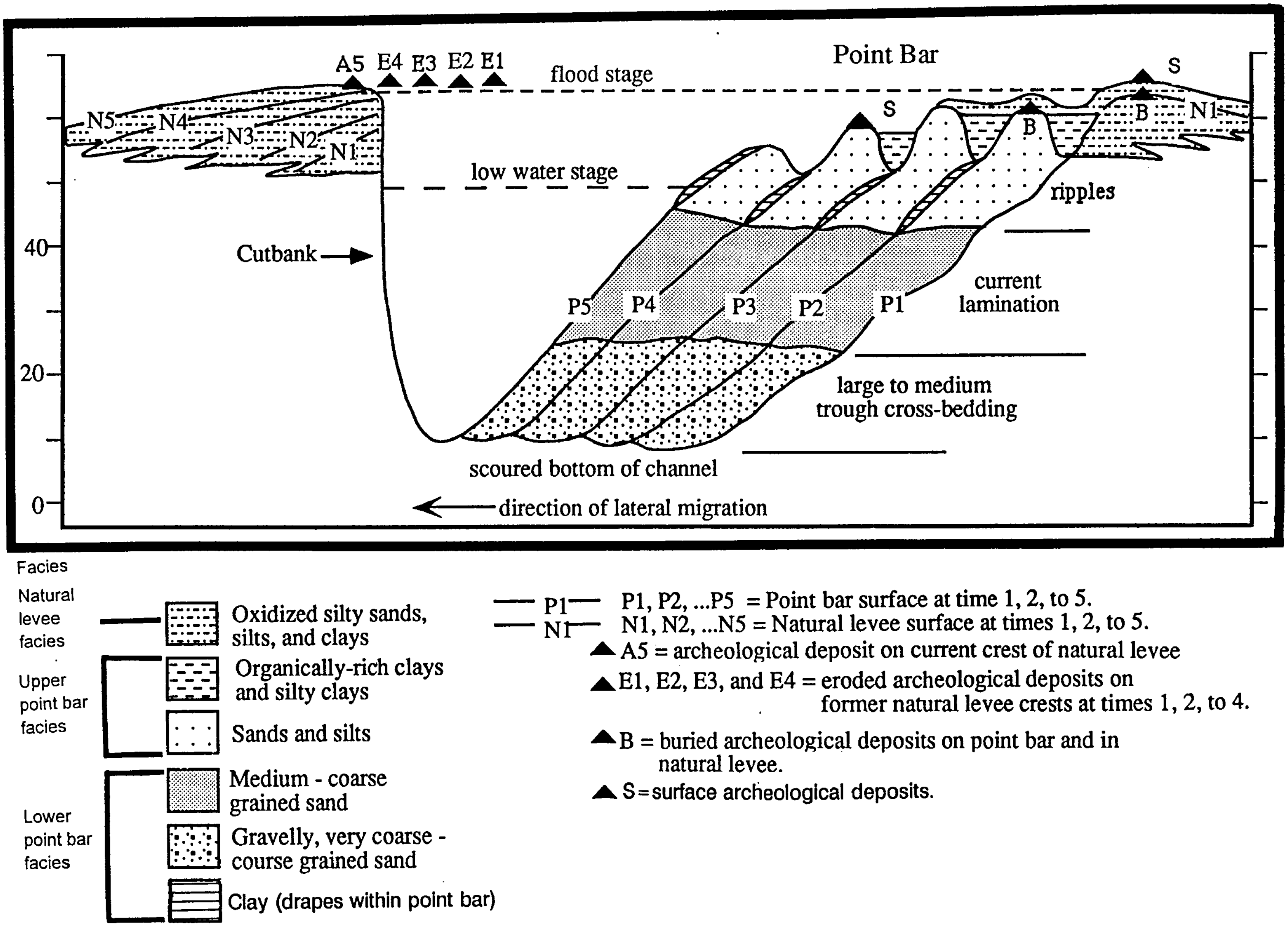


Figure 5. Lateral migration, sedimentology, and site formational processes within a meandering river channel. From Heinrich (1991) as modified from Gagliano and Van Beek (1970).

swamp of the adjacent floodplain (Galloway and Hobday 1983:53-53; Farrell 1989).

Geoarcheology

Depositional environments associated with a meandering river system affect the preservation of archeological deposits. The vertical accretion of sediments that aggrades natural levees and fills backswamp and abandoned channels works to preserve archeological deposits within these environments. Specifically, the lateral accretion of point bar deposits can preserve archeological deposits, such as historic shipwrecks, since the lateral accretion of the point bar deposits occurs within a river channel (Goodwin et al. 1991).

However, the continually wet, swampy, and poorly drained nature of the backswamp and channel environments can minimize the accumulation of most types of archeological deposits. The active lateral migration of the Mississippi River significantly affects the preservation of archeological deposits that predate the abandonment of an abandoned river channel or course segment within a meander belt. While active, a typical Mississippi River channel rapidly migrated back and forth across its meander belt. As the channel of a meandering river migrates, its cutbanks consume the fluvial deposits, especially the associated natural levee, to the depth of the channel (Figure 5). As the lateral migration consumes the natural levee, overbank sedimentation acts to rebuild the natural levee adjacent to the new cutbank. As a result, the natural levee on the side of a cutbank migrates with the cutbank and eventually destroys any archeological deposits that have accumulated on it. Thus, the meandering of an active river channel will destroy all of the archeological deposits that predate the formation of the corresponding meander belt and the archeological deposits contemporaneous with it. At Nina Plantation, depositional processes also have been affected by the position of the various man-made levees over the last 150+ years.

Finally, an active meander belt will bury the contemporaneous archeological deposits not destroyed by lateral migration. As an active channel rapidly migrates away from the newly formed point bar, it covers the older portion of that point bar with natural levee deposits (Figure 4). Any archeological deposits on the point bar or adjacent natural levee also would be buried as the river migrated away from it. Similarly, preexisting archeological deposits can be buried by natural levee deposits as the migration channel approaches them. By the time a cutbank migrates up to and stops at a preexisting archeological deposit, that site probably would be buried beneath a stratum of natural levee deposits (Heinrich n.d., 1991).

Structural Geology

The present Mississippi Embayment is a wedge-shaped synclinal structure encompassing ca. 259,000 km^2 (161,888 mi^2) of the Gulf Coastal Plain. This syncline plunges to the south with its structural axis roughly corresponding to the present Mississippi River valley. The Mississippi Embayment extends well into the craton of North America, and intersects the continental margin at a high angle (Keller et al. 1983:401). Sedimentary rocks, ranging in age from Jurassic to Recent, fill the synclinal trough and unconformably rest upon Paleozoic rocks of Cambrian to Pennsylvanian age. Within the project area, sands and gravels ascribable to the Eutaw and Tuscaloosa formations (Cretaceous) nonconformably overlie crystalline rock.

Prior to the acceptance of the failed-arm rift model, briefly discussed below, most geologists working in the embayment had felt that the incipient subsidence of the embayment was related primarily to the late Paleozoic Appalachian orogeny. According to Crushing, Boswell, and Hosman (1964:B22) subsidence of the embayment in the past as well as present is probably due to subcrustal movements, compaction, and overloading of the deposits. However, in the early 1970s, Burke and Dewey (1973) proposed that the Mississippi Embayment's origin was the result of an early Paleozoic failed-arm rift. In later models, the term Reelfoot Rift was applied to the breakup of Proto-North America during late Precambrian/early Paleozoic time. This initiated the Wilson cycle, which formed the Appalachian-Ouachita system (Keller et al. 1983:402). The presence of Mesozoic intrusive rocks is clear evidence for reactivation of the Reelfoot Rift during the Mesozoic time.

Following the Mesozoic reactivation of the old Reelfoot Rift, structural highs such as the

Ouachita Mountain system, the Ozark Uplift, and the southern Appalachian Mountains were present as topographic highs and as a subsequent source of clastic sediments for the embayment. This influx of detrital sediments occurred concomitant with subsidence and marine transgression of the embayment. For a more detailed review of these sources and the aulagocen origin of the embayment, see Braile et al. (1982) and Keller et al. (1983).

Soils

The area of Nina Plantation is characterized by Robinsonville and Commerce soils, both of which are occasionally flooded for brief to long periods of time. These soils also are subject to scouring and deposition. Robinsonville soils are nearly level to gently undulating, well-drained soils located in high to intermediate positions on natural levees along the Mississippi River (0 to 3 percent slopes). Robinsonville soils are located on the low, convex ridges between the river channel and the protection levees. The surface layer typically consists of a dark grayish brown silty loam or fine sandy loam that measures 15.2 cm (6 in) in thickness. This is followed by an underlying deposit of stratified, brown and pale brown very fine sandy loam, loam, and loamy very fine sand that extends to a depth of 152.4 cm (60 in) below surface (Powell et al. 1982:21).

Commerce soils are somewhat poorly drained, and like Robinsonville soils, they are located in high to intermediate positions on the natural levees of the Mississippi River. They are located in the shallow swales in the narrow areas between the river channel and the protection levees. Slopes are 0 to 3 percent. A typical surface layer consists of a dark grayish brown silt loam of silty clay loam that extends to a depth of approximately 17.8 cm (7 in) below surface. This is followed by a subsoil that extends to a depth of 152.4 cm (60 in) below surface. The upper layer of this subsoil is a dark grayish brown silt loam, while the lower portion is a grayish brown silt loam. A grayish brown silty clay loam makes up the underlying material (Powell et al. 1982:21).

A complete description and discussion of soils specific to the project area can be found in Chapter VIII of this report.

Regional Climatology of Pointe Coupee Parish, Louisiana

The climate of Pointe Coupee Parish, Louisiana, may be categorized as Humid Subtropical (*Cfa* in the Koppen Climate Classification). The area is classified as having relatively mild winters and long, hot summers. Much of this is related to maritime influence upon the area by the Gulf of Mexico.

Temperature

Average cold-month temperatures are typically between 4.4° – 15.6° C (40° – 60° F), but freezing temperatures are not uncommon. On average, the coldest month is January (approximately 10.6° C [51° F] average), the time of most frequent Arctic outbreaks and freezes. In the South, two general conditions may produce freezing temperatures (Rohli and Rogers 1993; Rogers and Rohli 1991; Critchfield 1983). The first is associated with migratory cold airmasses or *Arctic outbreaks*; the second involves nighttime radiational cooling. Both situations may result from the same conditions following a cold front passage; indeed, radiational cooling may bring further surface cooling to an area already affected by the Arctic outbreak (Vega et al. 1994). This is particularly damaging to the fragile ecosystems that exist in the region. However, considerable warming of the Arctic airmass is typical as the airmass approaches the Gulf Coast. Therefore, extremely cold temperatures are relatively uncommon in this region. The lowest recorded temperature for southeastern Louisiana was approximately –12.2° C (10° F), recorded on December 23, 1989 (Table 1). Because of the low frequency of extreme events, the mean first fall freeze date (0° C [32° F] temperature threshold; 50 percent probability level) is calculated to be November 22, while the mean last spring freeze (0° C [32° F]) temperature threshold; 50 percent probability level) typically occurs on March 4 (Vega et al. 1994). Due to the unavailability of data, New Orleans data are presented here. Differences to Pointe Coupee Parish or Baton Rouge, Louisiana are negligible.

Summer months are normally hot, with average temperatures around 26.1° – 28.3° C (79° – 83° F). Not only is the air temperature high in

Table 1. Climate Normals for New Orleans, Louisiana (1960 - 1990).

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	YEAR
MEAN MONTHLY AIR TEMPERATURE IN DEGREES F	51	54	62	69	75	80	82	82	78	69	61	55	68
PRECIPITATION IN INCHES (ROUNDED)	5.0	6.0	4.9	4.5	4.6	5.8	6.1	6.2	5.5	3.1	4.4	5.8	62
RELATIVE HUMIDITY (% AT 0600 CST)	85	84	85	88	89	90	91	92	90	88	86	86	88
MEAN WIND SPEED (MPH)	9.3	9.8	9.9	9.4	8.1	6.9	6.1	6.0	7.3	7.6	8.7	9.0	8.2

summer, but specific and relative humidity also are high. This is due to the dominance of maritime tropical airmasses during these months. The average July relative humidity in this area (taken from 6 a.m. readings) is typically between 85 to 95 percent (Table 1). Even at noon, the relative humidity approaches 70 percent. High humidity, in conjunction with high temperature, produces sultry, oppressive weather with low cooling power (Trewartha and Horn 1980). Therefore, summer heat throughout the Gulf Coast states closely resembles that of tropical wet climates (*Af* in Koppen). Temperature maximums typically approach 35° C (95° F) during the summer months with extreme temperatures near 38.9° C (102° F).

Precipitation

Precipitation is relatively evenly distributed throughout the year in the project area, averaging approximately 157.5 cm (62 in). High magnitude precipitation events are relatively common; most are in association with summer convective (airmass) thunderstorms. These individual thunderstorms occur almost daily throughout the summer and early autumn months in the southern United States, as a result of diurnal heating of the land surface (Easterling 1991). This thermodynamic forcing is exacerbated near the coast, where a diurnal cycle of land-sea breezes occurs in response to surface heating (Hsu 1988). Locally heavy precipitation events may occur in association with this enhanced convective forcing (Smith et al. 1986). This type of forcing is dominant in the south when the mean polar jet retreats to a position near the U.S.-Canada border in response to a reduced latitudinal thermal gradient.

Another cause of summer precipitation is the tropical cyclone. North Atlantic tropical cyclones are typically most common during the late summer (August - September), in association with high sea surface temperatures (SSTs). However, in Louisiana, tropical cyclones are most frequent during the early portion of the hurricane season (June - August), and during the last months of the season (October - November). These cyclones develop in the eastern Gulf of Mexico and in the Caribbean Sea, in response to high early and late season SSTs in these shallow water bodies (Vega and Binkley 1991, 1993, 1994). Tropical cyclones typically do not frequent the study area during mid-season (August -September); storms usually are steered into the eastern seaboard of the U.S. by the North Atlantic Subtropical High (STH). While the possibility exists for a tropical cyclone to strike the area during these months, the frequency distribution implies that it is unlikely. The tropical cyclone remains an important component of the precipitation regime of this area during the summer and autumn months, and may be seen as a benefit, especially during early autumn (Muller and Wax 1977).

In addition to the tropical cyclone, thermodynamic (convective) forcing triggers much of the precipitation during early autumn. Conditions at this time are similar to the summer months, when diurnal heating of the land surface becomes extreme. Pointe Coupee Parish experiences its driest months of the year during October and November, when there is a transition between precipitation forcing mechanisms. As stated previously, early season precipitation is primarily forced by thermodynamics and tropical cyclones. During the winter season, forcing is primarily

dynamic (low-level convergence in association with wave cyclones/fronts), which produces a winter precipitation maximum. The late autumn transition results in a precipitation lull, caused by three factors. First, the land surface does not heat sufficiently to induce convective thunderstorms; secondly, tropical cyclones are relatively rare; and finally, the polar jet is too far to the north of the region to induce dynamic forcing.

As mentioned previously, the winter and spring precipitation regimes are dominated by dynamic forcing associated with migratory wave cyclones. These baroclinic features are most frequent in this region as the polar jetstream reaches its furthest distance from the equator, near 30° N latitude. This induces a tremendous amount of moisture and energy into the midlatitudes through an enhanced Hadley circulation and a strengthened subtropical jet (McGuirk and Ulsh 1990; Philander 1990). In addition, frequency of wave cyclones increases during times of high sea surface temperatures in the eastern equatorial Pacific Ocean (El Nino/Southern Oscillation - ENSO - event). Douglas and Englehart (1981) found a high correlation between winter season precipitation in Florida and ENSO events. This is substantiated in Hsu (1993), Manty (1993), and Vega (1994), who found that Gulf of Mexico cyclogenesis increases during these times as the subtropical jet induces upper tropospheric venting. This higher frequency greatly affects southern Louisiana; positive precipitation anomalies typically occur during ENSO years (Vega 1994). Conversely, during a cold water event in the eastern equatorial Pacific (La Nina), southern Louisiana precipitation is significantly reduced. This is caused by the reduction of moisture and energy transported from the equatorial tropics into the midlatitudes as the "normal" Walker circulation anomalously strengthens (Rasmusson and Carpenter 1982), thereby weakening the subtropical jet and the influx of energy and moisture into the midlatitudes.

During the winter and spring season, heavy 24-hour rainfall totals are possible. Most are associated with slow moving wave cyclones. Flooding is possible if a high frequency of wave cyclones precedes a strong, slow moving system (Muller et al. 1990). Therefore, most winter-spring floods are caused by a combination of storm systems that saturate the soil in advance of a strong, slow moving system. The warm front typically produces the greatest amount of precipitation in these events (Muller et al. 1990; Hirschboeck 1987, 1988). Cold front passages may produce a high magnitude-short duration precipitation event; however, this only aggravates the imminent flood.

Extended periods of below (above) normal precipitation may occur during any season in association with particular mid-troposphere-to-surface circulation anomalies. During the summer and autumn months, anomalous westward (eastward) expansion (contraction) and/or displacement of the mean STH would cause below (above) normal precipitation in southeastern Louisiana (Vega 1994). Expansion (contraction) of this semi-permanent high pressure cell induces surface divergence (convergence) in the region that effectively prohibits (exhibits) precipitation processes. In addition, moisture advection in the surface-to-700 mb layer typically takes place west (into) of the area. Therefore, although thermodynamic processes are still dominant, STH expansion effectively reduces (induces) precipitation through surface divergence (which limits cloud growth - or convergence which promotes cloud development) and reduced (enhanced) moisture advection. An expanded (contracted) STH also would diminish (augment) the frequency of tropical cyclones to the area as the cyclones typically steer westward of (into) the region in the mean easterly flow during STH expansion.

Recent evidence has shown that STH anomalies have become more frequent during recent times (Vega 1994; Coleman 1979, 1982, 1988). During the recent past, the STH has expanded anomalously; however, the westward edge of the STH has remained east of the study region, causing positive precipitation anomalies. It is speculated that anomalous STH expansion (contraction) is linked to hemispheric warming (cooling) trends; the mean fluctuations qualitatively resemble hemispheric temperature trends. This was especially evident during the warm decades of the 1980s, which leads to speculation concerning anthropogenic "greenhouse" gas increases (Hanson et al. 1988, 1989). However, it must be emphasized that a quantitative link between hemispheric temperatures and STH forcing has not been directly established (Vega 1994).

During the cool season (late autumn - spring), the polar jet stream relocates to a lower mean latitude (approximately 30° N) from its warm season position nearest the U.S.-Canada border. Drought conditions are possible in the study region if the polar jet is displaced to a higher mean latitude. This typically occurs during times of persistent cold water episodes in the eastern equatorial Pacific Ocean, a La Nina (El Nino) event (Douglas and Englehart 1981; Bjerknes 1969). This reduces Gulf of Mexico cycliogenesis as well as the amount of momentum and moisture transport from the tropics into the midlatitudes (Hsu 1993; Manty 1993). The position and expansion of the STH also is linked to this phenomenon as the STH typically undergoes anomalous expansion during La Nina episodes. This is reflected in the time-series of the Pacific/North American teleconnection index (PNA) (Leathers and Palecki 1992) that identifies the generalized flow of longwaves (Rossby waves) across North America. When the index is highly positive, the longwave pattern exhibits a high amplitude. Therefore, for Louisiana, positive precipitation amounts typically are recorded during times of longwave amplification, which allows wave cyclones to migrate to a lower mean latitude. The PNA is highly correlated to the Southern Oscillation index, which identifies episodic events in the equatorial pacific (El Nino and La Nina events). Typically, El Nino events trigger a highly positive PNA index. Conversely, La Nina events trigger a high negative PNA index. Because one of the action centers of the PNA is located over the Florida panhandle, the PNA index directly measures the influence of the STH. From this, it is apparent that STH expansion over the study region during the cool season contributes to changes in the longwave flow regime over North America, which result in anomalously dry or wet conditions along the Gulf Coast (Vega 1994).

Water Budget Climatic Model

The water budget climatic model is a tool that can be used to evaluate the effects of climatic change or climatic variability on the total amounts of precipitation available for runoff into streams and rivers over a region. The model uses only the seasonality of daylength, and the monthly climatic inputs of temperature and precipitation, to estimate the monthly partition of precipitation into evapotranspiration, soil-water recharge, groundwater recharge, and water available for runoff. The model can provide estimates of the regimes of total runoff through the years, independent of the effects of modern land use (Muller et al. 1990).

In Table 2, excerpts are presented from monthly precipitation data from 1960 to 1990, for the nearest first order weather station to Point Coupee Parish. The data derive from the Louisiana Office of State Climatology (LOSC), and are verified for accuracy by the National Climatic Data Center.

The mean monthly water budget (Thornthwaite 1948; Thornthwaite and Mather 1955) depicts moisture surpluses during the cool season (December through April), which reinforces the nature of precipitation in the area. High amounts of rainfall combine with low potential evapotranspiration to produce winter surpluses during the cool months. Moisture deficits (or zero surplus) typically occur during late summer, despite abundant precipitation. Vegetation begins to draw soil moisture during the month of May and continues through November, at which time soil moisture recharge begins. Precipitation reaches an annual low during this time (October), which reduces soil moisture to such an extent that vegetation undergoes extreme stress.

Flooding

Southeastern Louisiana is particularly prone to frequent floods. In this region, floods are tied to complex relationships between the local topography and the atmosphere, and are tied to two primary forcing mechanisms, the mid-latitude cyclone, and the tropical cyclone. Flooding appears to have increased in frequency and magnitude over the recent past (Muller et al. 1990). Of the 16 greatest floods on the Amite River, 12 were in association with a mid-latitude cyclone. Of the remaining four flood events, three were of tropical cyclone origin. Typically, flooding in this region occurs as the result of the passage of a slow moving mid-latitude cyclone. Warm front passages typically saturate soils in advance of the cold front that exacerbates the imminent flood (Muller et al. 1990).

Although catastrophic events, floods of local origin do not significantly alter Mississippi River

Table 2. Soil Moisture Budget, in Inches, Baton Rouge, Louisiana (1960 - 1990).

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	YEAR
POTENTIAL EVAPOTRANSPIRATION	0.7	0.9	1.6	3	4.7	6.2	6.7	6.3	4.9	2.8	1.2	0.8	39.8
PRECIPITATION	4.4	4.8	5.1	5.1	4.4	3.8	5.5	4.7	3.8	2.6	3.8	6	54
PRECIPITATION MINUS POTENTIAL	3.7	3.9	3.5	2.1	-0.3	-2	-1	-2	-1	-0.2	2.6	5.2	14.2
CHANGE IN SOIL MOISTURE STORAGE	0	0	0	0	-0.3	-2	-1	-2	-1	0	2.6	3.4	0
SOIL MOISTURE STORAGE (AT END OF MONTH)	6	6	6	6	5.7	3.3	2.1	0.5	0	0	2.6	6	44.2
ACTUAL EVAPOTRANSPIRATION	0.7	0.9	1.6	3	4.7	6.2	6.7	6.3	4.3	2.6	1.2	0.8	39
WATER DEFICIT	0	0	0	0	0	0	0	0	-0.6	-0.2	0	0	-0.8
WATER SURPLUS	3.7	3.9	3.5	2.1	0	0	0	0	0	0	0	1.8	15
ACCUMULATED SURPLUS	4.6	6.2	6.6	5.4	2.7	1.4	0.68	0.34	0.17	0.08	0.04	1.8	29.9
RUNOFF	2.3	3.1	3.3	2.7	1.4	0.68	0.34	0.17	0.08	0.04	0.02	0.9	14.9

terraces. Locally generated floods are capable of severely impacting only smaller drainage basins in southeastern Louisiana. The mid-nineteenth century event that impacted Nina Plantation must have been induced far from Louisiana. Typically, a flood event of this magnitude evolves over a series of months prior to the event. Catastrophic floods on the lower Mississippi River seem to involve anomalously high snowfall in the upper Mississippi and Ohio river valleys. A recent example was the flood of 1973 that recorded the highest discharge (55,600.0 cms) on the lower Mississippi River (Hirschboeck 1987). This event was caused by a persistent trough over the Midwest and eastern United States, resulting in high snowfall totals through the 1972 - 1973 winter, in addition to positive rainfall anomalies during the spring of 1973 (Hirschboeck 1987). Persistent troughing is typically the result of a blocking high over the eastern U.S. and western North Atlantic Basin. The high ensures long lasting trough placement, as well as copious moisture advection in its lee. A similar situation, causing flooding on the Missouri and upper Mississippi rivers was apparent during the summer months of 1993. Although above normal river stages on the lower Mississippi River were recorded during this event, the lower Mississippi River was well below flood stage at all times.

Therefore, it is evident that the lower Mississippi River flooding is a springtime event associated with the spring flush of snowmelt over the upper Mississippi and Ohio rivers. These events are inherently tied to anomalies in atmospheric circulation, which typically occur months in advance of the catastrophic flood (Hirschboeck 1987, 1988). Localized flood events are not large enough to cause significant changes on the lower Mississippi River, which is capable of handling tremendous discharge amounts.

Flora and Fauna

Flora

Nina Plantation is located on the west bank of the Mississippi River just below the False River cutoff. This area has been under some form of management or cultivation since the mid-eighteenth century, and it is likely that much of the natural environment was affected by these activities. Originally, the following woody species are likely to have been present in the area: sweetgum (*Liquidambar styraciflua*), cherry-bark oak (*Quercus falcata* var. *pagodaefolia*), willow oak (*Quercus phellos*), cow oak (*Quercus prinus*), Nutall oak (*Quercus texana*), American elm (*Ulmus americana*), winged elm (*Ulmus alata*), persimmon (*Diosyros virginiana*), cottonwood (*Populus deltoides*), American sycamore (*Platanus occidentalis*), black willow (*Salix nigra*), honey locust (*Gleditsia triacanthos*), water locust (*Gleditsia aquatica*), and hackberry (*Celtis occidentalis*).

All of these species could have been used as sources of fuel. In addition, the acorns from the various oaks would have been a good source of winter forage for swine and wild species. Persimmon fruits could have served as a food source, and as an attractant for various animal species. "An interesting and important contribution may have been [persimmon's] attraction for opossums. The animals flock to the trees in fall and are easily caught, sometimes several at a single tree" (Hilliard 1972:90). Locust, sycamore, elm, and oaks may have been sold or used locally for lumber. The wood from honey and water locust is ery strong and may have been used for fence posts. The young black willow twigs can be woven into baskets and wicker furniture. American elm wood was steamed and bent into forms for barrel and wheel hoops, veneer, and baskets. Giant cane (*Arundenaria gigantea* and *Arundenaria tecta*) would have grown in the forest breaks. Early settlers may have grazed their hogs and cattle on the young cane shoots. Cane was also an important source of raw materials for basketry, fishing poles, and cane bottomed chairs. This rich environment was also a source of various wild game, medicinal plants, and some wild foods. Climbing plants like grapes (especially muscadine grapes) and blackberries probably were collected for fresh consumption, jams, pies, or wines. Medicinal plants present in this environment included sassafras (*Sassafras albidum*), pokeweed (*Phytolacca americana*), and catbrier (*Smilax bonxnox*).

The surrounding marsh areas may have contained bald cypress (*Taxodium distichum*), swamp red maple (*Acer rubrum* var. *drummondii*), tupelo gum (*Nyssia aquatica*), water ash (*Fraxinus carolininana*), and pumpkin ash (*Fraxinus profunda*). Bald cypress was an important lumber source; because of its resistance to decay, it has been used for "construction timbers, docks, boasts, and exterior siding" (Brown and Kirkman 1990:57). A 1739 historic description of the Pointe Coupee area written by Salmon, an official at the Pointe Coupee settlement, to the Ministry of the Colonies, described the uninhabited portions as dominated by cypress swamps, lakes, and flooded prairies. In addition, the description states that the most common tree in the area was cypress (Hall 1992:250).

The results of an ethnobotanical survey of the Nina Plantation project area, conducted prior to excavation, are presented in Table 3. The survey noted a grove of persimmon trees, and scattered acacia and sycamore trees. In addition, feral indigo was recorded on the batture, but out of the immediate project area; because it was not present along the survey transects, it does not appear on Table 3. Indigo cultivation and production, while prevalent during the eighteenth century in

Table 3. Nina Plantation Ethnobotanical Survey.

LATIN NAME	COMMON NAME	TR 1	TR2	TR3	TR4	TR5	TR6	TR7	BANKLINE
WOODY SPECIES									
Acacia smallii	Acacia	x	x	x	x	x	x	x	
Carya illinoiensis	Pecan	x			x				
Cs. Carya	Possible hickory				x	x		x	
Celtis laevigata	Hackberry	x	x	x	x	x	x	x	
Cercis canadensis	Red bud	x				x		x	
Cornus stolonifera	Red osier dogwood		x	x					x
Diospyros virginiana	Persimmon					x		x	
Franxinus pennsylvanica	Green ash	x		x			x	x	
Platanus occidentalis	Sycamore							x	
Salix nigra	Black willow				x				
HERBACEOUS SPECIES									
Amaranthus sp.	Amaranth							x	x
Ambrosia trifida	Giant ragweed	MC	x	x	MC	x	x	x	
Ampelopsis cordata	Pepper-vine		x	x	x	x	x	x	
Asclepias spp.	Milkweed		x						x

Table 3, continued

LATIN NAME	COMMON NAME	TR 1	TR2	TR3	TR4	TR5	TR6	TR7	BANKLINE
Campsis radicans	Trumpet-creeper	x	x		x	x	x	x	
Cardiospermum haliaabum	Common balloon vine	x	x	x		x	x		x
Cucumis melo var. dudiam	Smell melon				x				x
Cyperus sp.	Umbrella sedge						x		
Eupatorium coelestinum	Mistflower			x	x	x		x	
Ipomea sagittata	Morning glory	x	x	x	x	x	x	x	
Passiflora spp.	Maypop		x	x		x		x	
Polygonum spp.	Smartweed	x				x	x		x
Rhus radicans	Poison ivy		x	x	x	x			
Rubus louisianus	Blackberry	x	x	x	x	x	x	x	x
Rubus trivialis	Dewberry	x	x	x	x	x	x	x	x
Smilax bonx-nox	Catbriar	x	x	x	x	x	x	x	x
Smilax hispida	Greenbriar	x	x		x	x	x	x	x
Spilanthes americana	Creeping spotflower			x	x				
Vernonia altissima	Ironweed		x	x	x	x		x	
Vitis spp.	Wild grape		x	x			x	x	
Xanthium chinense	Cocklebur	MC	x	x	MC	x	x	x	

Note: MC denotes major component of transect.

Point Coupee Parish, had been replaced in the early nineteenth century by cane and rice cultivation.

Fauna

Numerous wild animal species would have inhabited the undisturbed nineteenth century forests and swamps. Salmon's 1739 description of the Pointe Coupee area stated that few fish were present; however, a great number of alligators, reptiles, and numerous varieties of insects were present. In addition, Salmon noted many birds, including ducks, Canadian geese, cranes, Amazonian parrots, cardinals, and woodcocks, in the area. The account also stated that deer and bear had become scarce in the settled areas of Pointe Coupee (Hall 1992:250). Game species that may have been present include: white tailed deer (*Odocoileus virginianus*), eastern and swamp rabbits (*Sylvilagus floridanus* and *S. carolinensis*), river otter (*Lutra canadensis*), opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), gray and fox squirrels (*Sciurus carolinensis* and *S. niger*), alligator (*Alligator mississippiensis*), black bear (*Ursus americanus*), wild turkey (*Melewagris gallopavo*), and quail (*Colinus virgianus*). During the spring and fall migrations, a variety of birds, including ducks, geese, snipes, plover, and passenger pigeons, would have been present along the Mississippi River and in its surrounding uplands.

Aquatic and semi-aquatic faunal resources also were varied. Some of the more important game fish available in the Mississippi River include: white and yellow bass (*Morone chrysops* and *M. mississippiensis*), carp (*Cyprinus carpio*), various catfish species (*Ictalurus* and *Pylodistis* spp.), white crappie (*Promoxis annularis*), freshwater drum (*Aplodinotus grunniens*), garfish (*Lepisosteus* spp.), sauger (*Stizostedoin canadensis*), and shads (*Dorosoma* spp.). Other aquatic sources of protein could have included common snapping turtles *(Chelydra sepentina),* alligator snapping turtles (*Macroclemys termmicncki*), various frogs, freshwater mollusks, and some backwater species of fish.

CHAPTER III

THE HISTORICAL CONTEXT

Introduction

In 1682, the French explorer Robert Cavelier, Sieur de La Salle, descended the Ohio and Mississippi rivers from Canada to the Gulf of Mexico, claimed the entire Mississippi River Valley for King Louis XIV. He named the territory "Louisiana" to honor the monarch (Neilson 1957:863). As the French began the colonization of Louisiana, Pierre Lemoyne, Sieur d'Iberville, recorded in his journal in 1699 the first mention of Pointe Coupée. When his expedition reached the 35.4 km (22 mi) curve in the Mississippi River, they chose instead to take a 6.4 km (4 mi) short cut through the channel that Iberville called *Pointe Coupée*, or the cut point. Eventually, the river changed course ca. 1722, flowed through the channel, and the ox-bow curve known today as *la Fausse Riviére*, or False River, was created (Riffel 1983:3). The project area lies within the interior of the oxbow, i.e., in the area known locally as False River Island (Figures 6 and 7).

Pointe Coupée Parish enjoys a rich and varied heritage. The second oldest European settlement in Louisiana, the parish was subject to French, Spanish, and American colonial influences. Its people were from diverse ethnic backgrounds; the influence of European, African, Caribbean, Native American, and American societies can be discerned in the architecture, speech, foodways, and names of the Parish residents. The cultural, social, and economic interactions of these groups, influenced at times by extra-parish events, form the unique context within which the interpretation of the archeological remains at Nina Plantation (Site 16PC62) must take place. In this chapter, the general history of Pointe Coupee Parish is reviewed, with particular emphasis on the social milieu, labor relations, economic development, and the history of floods and levee construction. A detailed history of the project area follows in Chapter IV.

Settlement between 1717 and 1900

The first formal French settlement at Pointe Coupée was established in 1717 on the West Bank of the Mississippi River. By 1722, 10 French colonists and their families apparently resided at a Tunica village located just to the north of the French settlement. By 1726, the French population in the Tunica village had risen to 52, more than double the population of the Pointe Coupée settlement (21) (Riffel 1983:3-5; Hall 1992:243). Because of the strategic position of Pointe Coupée, the French established a military post there, which served as the defensive headquarters for the community after the Natchez rebellion in 1729 (Riffel 1983:6; Davis 1971:59). A continuing alliance between the French and the Tunica put both groups in danger from the Natchez Tribe, and attacks on the two settlements were common. In 1731, a massacre in the Tunica village resulted in the deaths of both French and Tunica, and sporadic raids by the Natchez and Chickasaw required constant vigilance (Hall 1992:246-248). Despite these recurrent attacks, the close relationship between the French and the Tunica continued into the eighteenth century (Hall 1992:244), even though the Tunica population had been reduced drastically by warfare, disease, and westward migration (Davis 1971:24; Riffel 1983:19).

The Pointe Coupée community continued to grow; by 1745, the census reported that 260 whites, 391 blacks, 15 mulattos, and 23 Indians occupied the west bank of the river (Riffel 1983:4). The fort established at Pointe Coupée

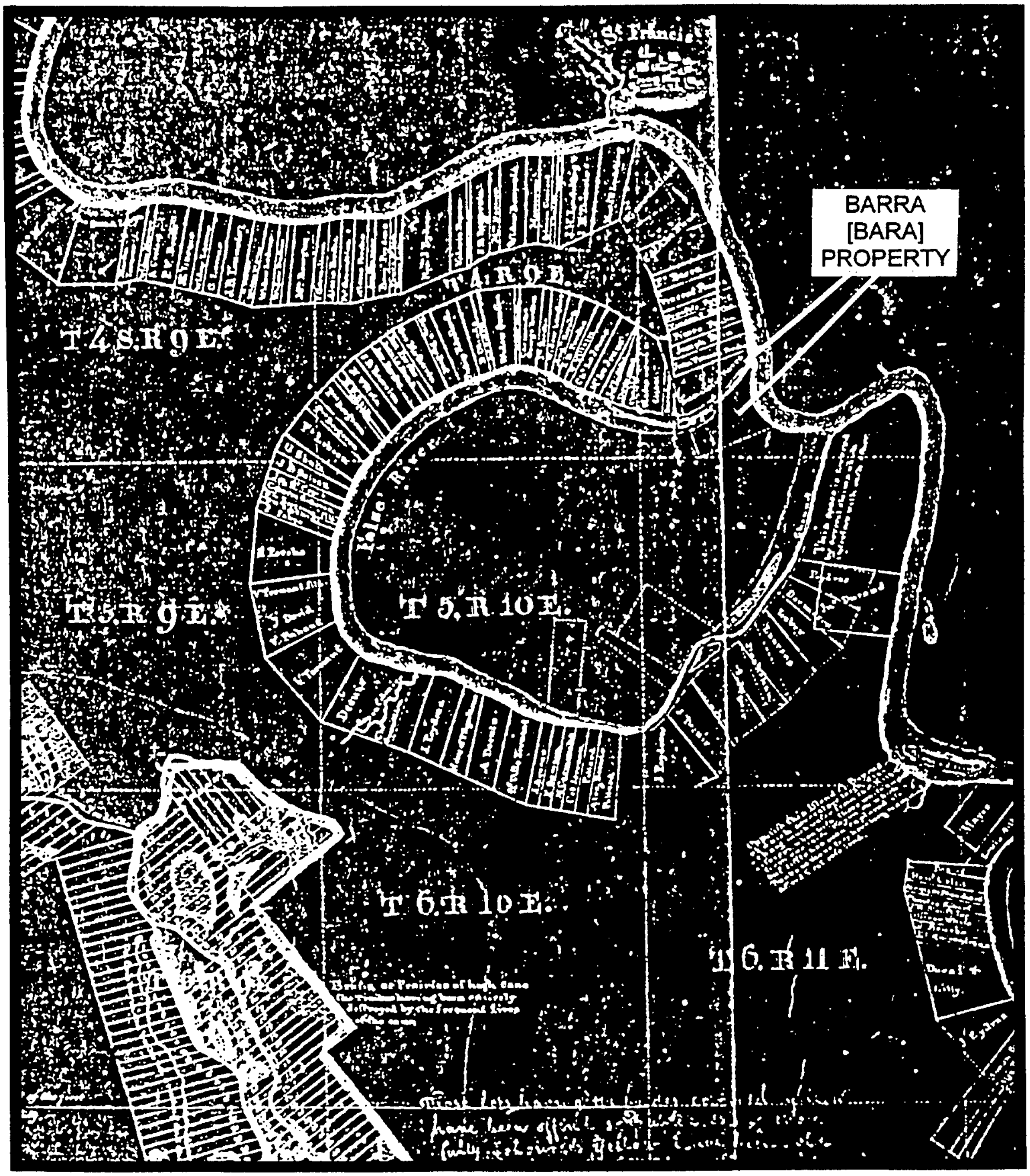


Figure 6. Excerpt from an unidentified map of Louisiana [ca. 1816], showing the location of the project area (on file in the National Archives).

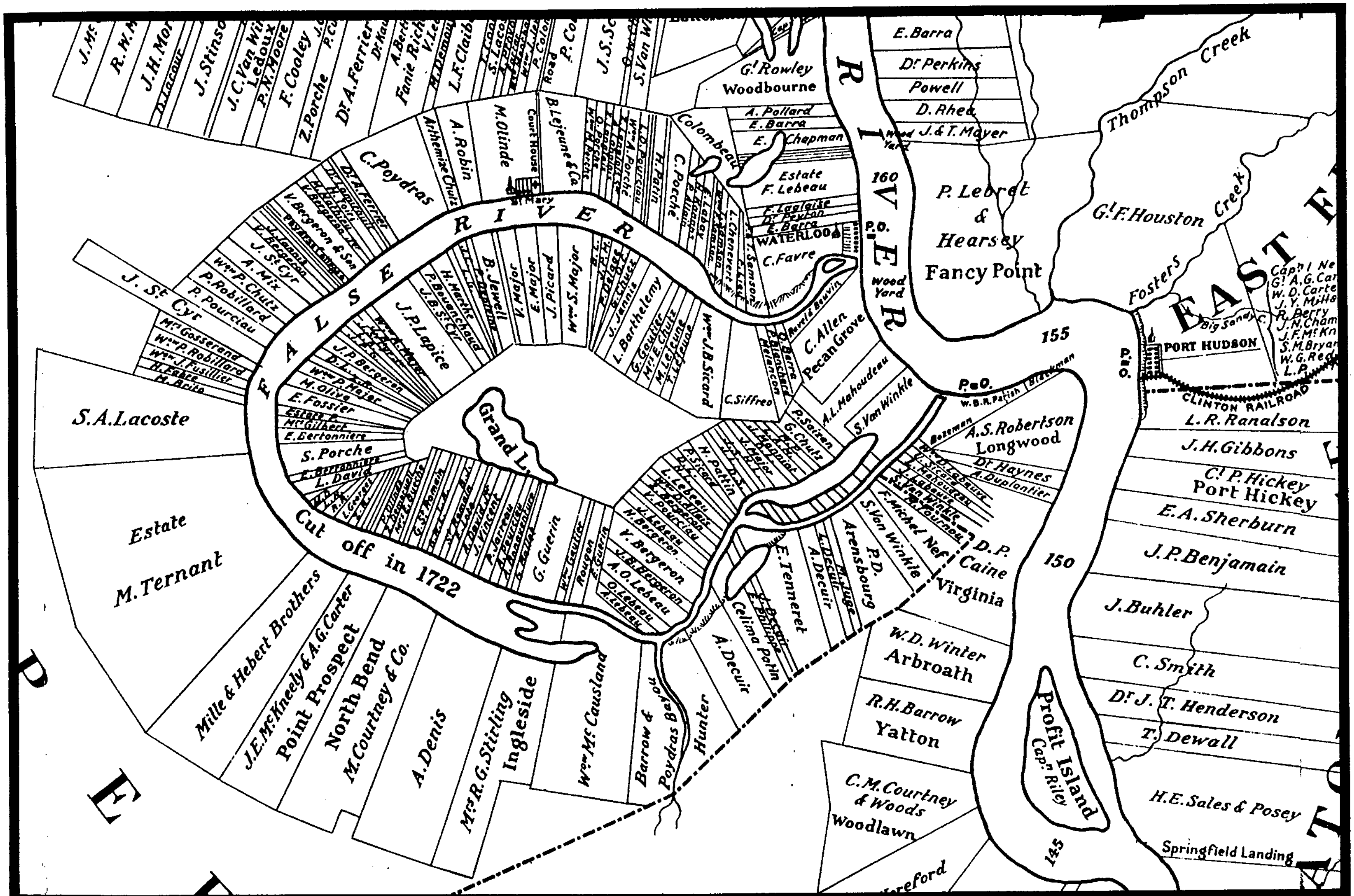


Figure 7. Excerpt from Norman's Chart, *Plantations on the Mississippi River from Natchez to New Orleans* [1858], depicting C. Allen's Pecan Grove Plantation.

was enlarged and strengthened in 1760, in the midst of the French and Indian War, and a rebuilt Church of St. Francis was consecrated in 1760; it stood until floods and erosion destroyed it during the 1890s. Norman's map (1858) depicts both the new fort and the church near the present site of the St. Francisville Ferry, approximately 4.8 km (3 mi) upriver from the site of Nina Plantation. The original fort had been constructed approximately 1.6 km (1 mi) above the site of the nineteenth century town of Waterloo, even closer to the Nina Plantation site (Riffel 1983:40, 44, 62).

In 1763, at the conclusion of the French and Indian War, the British expelled France from North America. Under the terms of that peace treaty, the French ceded all of Louisiana west of the Mississippi River to Spain. The Spanish subsequently maintained a military presence at Point Coupée, and during the American Revolution, soldiers from the local garrison joined the Spanish forces that seized Baton Rouge from the British (Riffel 1983:13). While adjustments and compromises had to be made, both the fort and the settlement prospered under Spanish dominion, due in large measure to the reopening of trade after the end of the war (Davis 1971:133-134; Hall 1992:252).

The beginning of the nineteenth century brought more change to Pointe Coupée Parish. As part of an American Territory, and in 1812, as part of the state of Louisiana, Pointe Coupée was subjected to changes in legislation, trade, and immigration patterns. The industrial innovations of the late eighteenth and early nineteenth centuries – the cotton gin and steam power – brought increased trade and production. Legislative changes were felt in approaches to education, in levee and road construction, and in control of the slave labor force.

By the eve of the Civil War, Pointe Coupée Parish had become one of the more prosperous agricultural areas in the state. Despite the fact that the Parish suffered little direct damage during the war, the economic effects were widespread. The war destroyed the transportation network in the South, ruined its credit, and dislocated its market for cotton. Confederate defeat also fostered political upheaval. The planter was disenfranchised, at least temporarily, and for a few years lost his predominant influence in local, state, and national government. During the era of Reconstruction, from 1865-1877, Louisiana remained under Federal military occupation; new political alliances attempted to govern the Pelican State and, incidentally, to protect the interests of the freed slaves. It was not until the last quarter of the nineteenth century that Pointe Coupée Parish readjusted to the sweeping changes in the labor supply, and again began to show solid signs of prosperity.

The Social Milieu in Pointe Coupée Parish

From its inception in the early eighteenth century, the community at Pointe Coupée was ethnically diverse. The colonists were of European derivation, with the majority from France, French Canada, and the West Indies (Davis 1971:131). A 1732 report on the settlement reported 40 colonists, almost all of whom were Franco - Belge (Walloons) (Hall 1992:247). The colonists in Pointe Coupée imported African slaves to meet their labor needs, relying at first on slaves purchased from the West Indian colonies, and later, on those brought through direct trade between Africa and Louisiana, the latter being conducted by the Company of the West Indies (Taylor 1963:6-7). The 1731 census reported 95 whites, including 26 children; 70 black slaves, including seven children; and three Indian slaves (Hall 1992:247). By 1745, blacks outnumbered whites 391 to 260, and Pointe Coupée had the densest slave population of any location in Louisiana. By the close of the eighteenth century, approximately 2,000 blacks, 700-800 whites, and 60-80 free people of color lived in the Pointe Coupée community (Riffel 1983:15). In addition to these groups, the Native American population exerted strong influence during the formative years of the settlement.

During the earliest years of settlement at Pointe Coupée, inter-racial mixing was common. This has been explained at least partially as a result of the frontier situation that prevailed (Hall 1992:240), although it also may attest to a less rigid racial classificatory system than was associated with either the British or Spanish colonies (Davis 1971:84; Hall 1992:240). The small size of the slaveholdings in the early years also was more conducive to close interaction between the groups. In the Pointe Coupée community, there was frequently full acknowledgment of children born of such relationships. Often, children of

mixed race and their mothers were freed and counted as white in the censuses (Hall 1992:240). Throughout the eighteenth century, and probably into the nineteenth century, intermarriage between Africans and Native Americans was relatively common. Native American women, even if they were not themselves enslaved, often lived in the quarters with their slave spouses (Hall 1992:335, 358); their offspring received the term *grif*, to distinguish their mixed ancestry (Hall 1992: 262).

Records from Pointe Coupée are detailed in their descriptions of age, gender, and ethnic affiliation of the slaves (Hall 1992:282), and slave-owners of the area exhibited a general preference for laborers of African descent (Davis 1971:80). By 1782, more than 75 percent of all adult slaves on inventories from Pointe Coupée were African, as opposed to Creole (Louisiana born). Their named ethnic affiliations included Mina, Fon, Yoruba, Adó, Hausa, Mandinga, Bambara, Wolof, Fulbe, and Nard (Hall 1992:288). The estate of Bara dit Leblond, of which Site 16PC62 was once a part (see Chapter IV), had one of the most heavily Africanized slave populations in the area; a 1782 inventory indicates that 78.3 percent of the adult slaves at Bara's plantation were Africans (Hall 1992:362). There also is evidence that at least Mina slaves organized socially, extending their community to include a group of Minas living in New Orleans. Owners frequently allowed, or at least tolerated, the development of African ethnic communities among the slaves, in the belief that the growth of ethnic division would help to discourage more broadly organized dissent (Hall 1992:318-319).

The picture that emerges of the Pointe Coupée community at the end of the eighteenth century is one of ethnic diversity, with a gradually increasing social distance between landholder and labor. This distance was confirmed in the events of 1795.

The Slave Rebellion Conspiracy of 1795

In April 1795, the commandant of the Pointe Coupée post, Guillaume Duparc, learned of a conspiracy by the slaves to murder their masters and seize freedom by force of arms. This plan apparently had been encouraged by accounts of the slave revolts in the French Antilles, the Revolution in France, and the 1794 abolition of slavery in French colonies (Holmes 1970:343-344). Antoine Sarrasin, a mulatto slave on the Pointe Coupée plantation of Julien Poydras, with the help of several other slaves, was accused of organizing the intrigue. Duparc immediately sent three patrols to arrest Sarrasin and other suspected insurrectionists. The activities and movements of all slaves were severely restricted, and systematic searches for firearms were made of the quarters (Holmes 1970:348). By May, the patrol had seized 60 persons accused of taking part in the conspiracy.

According to one recent scholarly account,

> The trial began at Pointe Coupée on May 4, 1795. Fifty-seven slaves and three local whites were convicted. By June 2, twenty-three slaves were hung, their heads cut off and nailed on posts at several places along the Mississippi River from New Orleans to Pointe Coupée. Thirty-one slaves were sentenced to flogging, and to hard labor in Spanish fortresses in Mexico, Florida, Puerto Rico, and Cuba. All three whites were deported, and two of them were sentenced to six years of forced labor in Havana (Hall 1992:344).

The conspiracy at Pointe Coupée, discovered before the uprising began, nevertheless unsettled colonists. Slaveholders reacted with rigorous discipline, curtailed privileges, and intensified punishments for the men and women in bondage. According to Hall (1992:376), "The semi-egalitarian tradition among masters and slaves born out of the insecure frontier gave way to systematic, preventative terror." Despite these precautions, another plot for revolt was revealed in 1796 (Holmes 1970:358), and in 1811, an actual rebellion by approximately 500 slaves from the Pointe Coupée area resulted in the deaths of 66 rebels (Holmes 1970:359).

Labor Relations

Prior to the events of 1795, Governor Miró had warned the colonists of Pointe Coupée about the dangers of their lenience; under French rule, it had not been unusual for slaves to have arms, to enjoy free passage from plantation to plantation, and to enjoy similar small liberties (Davis 1971:80; Hall 1992:323; Holmes 1970:348). The testimony of César, one of the slaves accused in the revolt, indicated that Pointe Coupée slaves

had been able to sell their pigs and chickens to purchase guns, powder, and balls (Hall 1992:329). Immediately after the aborted slave revolt of 1795, the new governor of the Spanish colony of Louisiana, Baron Francisco Luis Héctor de Carondelet, issued a new police code that placed more detailed restrictions on the slaves. He also cautioned the colony's slaveholders to avoid:

> . . . on the one hand . . . too great indulgences, with which some treat their Slaves, rendering them insubordinate, and dangerously insolent, and on the other hand . . . the severity and inhumanity of certain masters, who by their violence . . . [induce] their slaves, to form desperate designs (McGowan 1976:387, quoting Baron de Carondelet).

The decree also urged planters to allow free time for leisure and for slaves to attend to their own planting (Holmes 1970:355).

Despite these cautions, and even prior to the 1795 Rebellion, legal records of Pointe Coupée provide graphic evidence of incidences of severe cruelty towards slaves. Between 1782 and ca. 1821, Madame Bara/Durand (born Jeanne de Lattre) was the mistress of the plantation that included the current project area. In 1779, during her first husband's lifetime, the couple was investigated by the post commandant at Pointe Coupée for mistreatment of two slave women. The surgeon who conducted the investigation found one of the female slaves covered with welts from head to toe as a result of whipping. The slave had been suspended by her feet upside down from a gallery post while her mistress administered the lash. As for Monsieur Bara, he tortured the slave Gennevieve so harshly that it left her crippled (Hall 1992:311; Yakubik 1994:1:142).

After her husband's death, Madame Bara and her son continued to abuse their slaves. In 1792, local officials conducted another investigation into "les Traitements de la Dame Bara dit Le Blond en ses Eclaves;" the inquiry revealed that because the slave Perrine, a cook, would not mate with a slave on the plantation, Madame Bara kept her changed in the kitchen. In addition, her mistress choked Perrine and beat her often. Apparently Madame Bara also forced another female slave, after working all day, to spend the night shucking corn for the turkeys. That slave was forbidden to see her two children because Madame Bara claimed the slave was trying to poison her offspring (Hall 1992:312).

The surviving documents record no rebuke of the mistress for her cruelty, but the investigation itself is indicative of broader community beliefs about slave discipline. In this instance, public officials intervened twice on behalf of slaves to determine if they had been mistreated by an individual slaveholder. During the nineteenth century, as laws regulating the slaves grew more harsh, public intervention to protect the slaves virtually disappeared.

The harsh control that was exerted by Madame Bara/Durand, did not deter rebellion among the slaves on her plantation. For example, one of her slaves, Alexis, was implicated in the abortive slave revolt in Pointe Coupée Parish in 1795. Alexis was spared execution and received a relatively light sentence: a severe flogging, deportation, and five years of hard labor in one of the Spanish fortresses at Havana, Puerto Rico, Pensacola, or Vera Cruz (Andreu Ocariz 1977:154; Holmes 1970:332,361). Nevertheless, the facts do not support the suggestion in a previous report (Yakubik 1994:142) that Madam Bara dit Le Blond herself administered punishment to her slave for his insubordination.

Another figure in Pointe Coupée history, Julien Poydras, was widely acknowledged to be a kind master. Indeed, according to the following eighteenth century account:

> The colonist Poydras, whose fortune is beyond contradiction the most considerable of Louisiana treats his slaves very humanely and mildly. Hence, all those men have as much veneration and respect for him as if he were their father. It would be well for all proprietors, who treat their slaves so cruelly, to serve an apprenticeship with him for some years before owning any. They would learn from him the successful method of getting them to work, of feeding them, and of encouraging them. Never is the swing of the lash heard on his plantation. Not one of his slaves bears the mark of it. At the time of the cotton picking, they know what they ought to gather, and they do it. All over and above that amount, their good master pays them for their accou-

> trement. When they go to work, one would believe that all those cultivators are going to work their own fields, so cheerfully do they go . . . (Holmes 1970:347, quoting Paul Alliot).

Nevertheless, no fewer than 15 of Poydras' slaves were convicted in the unsuccessful slave insurrection of 1795. The conspiracy was devised on his plantation, and his slaves served as leaders of the plot (Hall 1992:364).

The slave regime could not have been maintained without concentrated discipline and strong restraints on the men and women in bondage. In Pointe Coupée, the community reinforced the plantation rules. When whites feared another slave uprising in Pointe Coupée in 1805, the American territorial governor sent in troops to keep order in the parish (Dormon 1977:393; Holmes 1970:358). Increasingly harsh restrictions on slaves were enacted regularly in Louisiana during the antebellum period.

On a local level, a slave patrol attempted to ensure that the perceived mistakes and indulgences of 1795 would never be repeated in the parish, and that slaves and free Negroes posed no threat to public order (Pointe Coupée *Democrat*, September 4, October 30, 1858, November 3, 1860). In addition, they had the responsibility of preventing runaways. In 1858, a correspondent of the local newspaper accused slaves in Pointe Coupée of stealing chickens from their masters and then selling the fowl to free Negro peddlers, who in turn sold the chickens to whites. The writer called on the newly reorganized slave patrol of the parish to crack down on the practice (Pointe Coupée *Democrat*, September 4, 1858).

Deriving its authority from the Police Jury, the Pointe Coupée slave patrol had responsibility for keeping the slaves in subjugation. All of the white male population, from ages 16 to 50, were subject to patrol duty, but the captains of the patrol were required to be slaveholders or the sons of slaveholders. The patrollers rode around the parish to ensure that no slave was off his plantation without a pass, and that no disturbances arose in the slave quarters after dark. According to Article 8 of the Pointe Coupée slave patrol code:

> The patrol shall arrest and commit to prison all white persons or free persons of color whom they may find, either in negro quarters or in company with slaves, and who may appear to be suspicious or dangerous (Pointe Coupée *Democrat*, November 3, 1860).

Any assembly of slaves outside the plantation was considered dangerous.

During the Civil War, Pointe Coupée Parish was spared the most severe conflict, but it felt the effects of the proximity of the siege at Port Hudson. Some slaves labored at Port Hudson during the siege, and Federal troops commandeered the services of others for crevasse repair, road maintenance, and additional tasks. Some slaves were sent out of areas of potential conflict by their owners, while others left of their own accord (Taylor 1967:28-29), and traveled either north or to other nearby states (Reid 1866:497). In addition, more than 24,000 former slaves in Louisiana enlisted in the Federal army during the course of the war (Davis 1971:264).

After Emancipation, the slave's status was transformed, but the distrust that existed between the white employer and the black laborer gradually increased. During the ensuing period of Federal occupation, the Freedman's Bureau made educational opportunities available to some blacks (Davis 1971:276), and others were able to assume some political responsibility. However, for most former slaves, daily subsistence remained the priority. Many of those who fled during, or just after the war, returned to their original plantation homes as contracted laborers. One cited example, from a plantation south of Baton Rouge, indicated that approximately half of the former slaves had returned by the beginning of the 1866 planting season (Reid 1866:464). But some planters complained of a scarcity of good labor, claiming that they (former slaves) "seem to have disappeared" from the region (Reid 1866:497). A number of small, free black communities were established after the war, though these rarely were documented or identified as such.

By the end of the period of Federal occupation, in 1877, new labor relationships were still in a fledgling state. Labor contracts varied widely, and labor disputes were not uncommon. By the 1880s, labor strikes affected many of the sugar parishes (Hair 1969:173-174). In 1887, a poor crop led to severely reduced wages; this, in turn,

spurred a violent strike which, in Terrebonne Parish, to the south led to a virtual massacre of striking laborers. According to Hair (1969:185), "the lot of the Louisiana Negro, although never good, was growing harder." Vigilantism was common; between 1882 and 1903, 232 lynchings were reported in Louisiana. But lynchings were not always reported, since, as one newspaper editorial stated, whites tended to regard such matters "not only with indifference, but with levity" (Hair 1969: 187-188).

There had been increasing segregation in Louisiana from the 1870s to the 1890s; by the turn of the twentieth century, Jim Crow legislation had been enacted, and blacks had been virtually disenfranchised through education and property requirements (Dethloff and Jones 1968:316).

Economic Development in Pointe Coupée

The fertile soils and advantageous location on relatively high ground along the Mississippi River contributed to the success of Pointe Coupée as an agricultural community. The first settlers at Pointe Coupée cultivated tobacco and indigo as staple crops (Riffel 1983:4-5), and grew corn and other subsistence crops (Hall 1992:250). A 1775 report on indigo production stated that in that year, Pointe Coupée had produced 50,000 pounds of copper indigo, fully one-quarter of all indigo produced in Louisiana (Holmes 1967:340). By the end of the eighteenth century, however, indigo blight, low market prices, and heavy competition joined to exact a heavy toll on the producers (Holmes 1967:347). Cotton began to replace indigo and tobacco as a market crop; this shift was accelerated by the introduction of the cotton gin in 1793. In addition, the advent of industrialization caused a steadily increasing demand for cotton. While indigo, tobacco, and subsistence crops still were grown, cotton gradually rose in economic importance. In the New Orleans area, the reintroduction of sugar cane as a productive industry began at the end of the eighteenth century (Le Gardeur, Jr. 1980:17-22). The difficulties with sugar cultivation in Louisiana arose primarily from the climate. Even with the introduction from the Philippine Islands of ribbon cane, which matured a month earlier than the West Indian variety, slaves on Louisiana sugar plantations worked 16 hours a day, seven days a week at harvest time, to bring in the crop before freezing weather destroyed it (McDonald 1993:14). In Pointe Coupée, at the northernmost margin of the sugar producing region, many difficulties were encountered in the attempt to grow cane and manufacture sugar (Goodspeed 1892:2:195). By 1828 and 1829, only 12 planters in Pointe Coupée Parish were cultivating sugar cane (Degelos 1892).

According to P.A. Champomier's *Statement of Sugar Made in Louisiana in 1844*, 10 new planters in Pointe Coupée Parish began the cultivation of sugar in 1844 (Champomier 1845:1). Jean Ursin Jarreau, the owner of Pecan Grove Plantation (Nina Plantation) was included in that number (Champomier 1846:2). The shift to sugar production, even in a marginal climatic area such as Pointe Coupée, may have been spurred by the Panic of 1837 and the resultant severe depression in cotton prices that lasted through much of the 1840s. Cotton continued in production in the Parish, but in reduced amounts. In the 1850s, a cotton gin was maintained on Pecan Grove Plantation (Nina Plantation) (Point Coupée Parish, Clerk of Court, OAB 1857, Vol. 2, No. 4605, PCPCC); however, by 1855, Cohen's *Directory* does not list any cotton in production at the plantation (City Directory Series, Louisiana Collection, Tulane). Cotton was shipped at the close of the Port Hudson siege, during the Civil War, and it was clear from the records that the planters had been stockpiling their harvested crops until normalcy returned to the waterways (French and American Claims Commission, Group 76, No. 17, July 1883).

Corn was grown mainly as a subsistence crop to supply the needs of the plantation. If the crop was particularly abundant, the surplus was sold locally, but little corn was exported from the Parish (McDonald 1993:54). Rice apparently did not play a major role in the economy of the Parish, and in fact is rarely mentioned in the records. One account from 1893 states only that "there will be but very little rice made in the Parish this year" (*Louisiana Planter and Sugar Manufacturer*, April 22, 1893:20). This contrasts sharply with post bellum rice production in the river parishes between Baton Rouge and New Orleans (Goodwin et al. 1990).

Sugar, while labor intensive, was extremely profitable, and remained the major staple crop in the Parish through the nineteenth century. The

effect of the Civil War and emancipation on the local sugar industry was extreme. Approximately 60 planters had cultivated sugar in Pointe Coupée on the eve of the Civil War; only 17 planters in the parish attempted a sugar crop in 1869, four years after the close of the conflict. Alexander Allen was included among the 17. At Nina, 61 hogsheads of sugar were produced with free labor, as compared to the 549 hogsheads harvested with slave labor in 1862 (Bouchereau 1869:2). Until the end of Reconstruction in 1877, sugar production at Nina Plantation averaged less than 100 hogsheads annually (Bouchereau 1869-1877).

While the Civil War did not create as much direct devastation in Pointe Coupée Parish as in other parts of Louisiana, the indirect economic effects of the war were harsh. According to a contemporary account; "Extravagant living left nearly every planter enormously in debt when the war came. Since then their affairs have gone from bad to worse" (Reid 1866:469). An uneasy period of readjustment in labor relations deterred economic recovery. The emancipation of the slaves not only severely disrupted the labor supply but also eliminated the millions of dollars Pointe Coupée planters had invested in human bondage. According to one authority, abolition swept away one-third of Louisiana's wealth (Winters 1963:428). The emancipation of the ca. 230 slaves the Allens owned at Nina and Bayou Fordoche in 1860 represented an estimated loss of close to a quarter of a million dollars. During the period of Reconstruction, from the war's end to 1877, prices for manufactured goods and other supplies were elevated, and agricultural production was hampered by labor and capital shortages (Davis 1971:275). As the end of the nineteenth century approached, resolution of these problems had been addressed through the increasingly common consolidation of farms into larger units. These larger farms often were corporately owned, and could provide the necessary capital for the adoption of technological advances.

Due to the nature of the crop, the labor on the sugar plantations usually was provided by individuals hired under contract, rather than through the sharecrop system popular in Mississippi (Hair 1969:171). One example of labor costs, taken from a plantation positioned upriver from Pointe Coupée Parish, indicated an average wage of between \$10 - \$11 per month. In addition, weekly rations of "mess pork", corn meal or flour, molasses, and salt were issued. Each family was allowed space for a garden, and was paid for Saturday afternoon, though no work was required (Reid 1866:490). By contrast, the 1887 strike had been provoked by wages that had dropped to an average of \$6 or \$7 per month, with no rations.

There is no suggestion in the records of the operation of manufacturing in the Pointe Coupée area, other than the processing of agricultural products, and the conduct of subsistence manufacture and craft work. Secondary processing included the production of cotton oil, cypress lumber and staves, and refined sugar. Subsistence manufacture was aimed at supplying the needs of the plantation community for shoes, clothing, lumber, bricks, and other sundry items. Carpenters, cabinetmakers, stonecutters, and masons plied their trades, and also supplied coffins and markers. In 1860, a saddle and harness maker was in residence in Bayou Sarah, across the river from Pointe Coupée Parish (The Pointe Coupée *Democrat*, October 22, 1859, November 3, 1860).

Most manufactured goods in the Parish were brought by river, and distributed either through numerous small general stores, or they were conveyed directly to the planters through commission sales. New shipments of goods arriving at the stores and advertised in local newspapers included imported wines, liquors, foodstuffs, hardware, clothing, tools, medicines, "plantation" blankets, and other sundry household and plantation supplies (The Pointe Coupée *Democrat*, October 22, 1859, November 3, 1860). Stores generally were located at the various river landings; major stores during the nineteenth century were at Cook's Landing, at Waterloo Landing, at the town of Anchor, and at Hermitage Landing (see Chapter IV). Additionally, by 1856, two stores were established inland, in the fledgling town of New Roads (Costello 1993:12). Most of these establishments also maintained warehouses at the landings, and acted as shipping agents for local agricultural products. During the latter part of the nineteenth century, some planters also acted as commodities brokers, purchasing cotton and

sugar from their neighbors and arranging for shipment to and sale in New Orleans (see Chapter IV).

In addition to the larger market economy, a smaller, but inter-related, economic system operated amongst the slaves. Slaves usually were allowed to cultivate kitchen gardens, and to raise small livestock in the quarters areas. In addition, they often were given the use of more extensive allotments of land at the edges of the cultivable plantation fields. In these areas, the slaves grew a variety of vegetables, greens, corn, hay, pumpkins, and potatoes, and they raised chickens and pigs. Much of this was for their own consumption, but corn, hay, pumpkins, and potatoes raised in the larger allotments were earmarked for sale or trade (McDonald 1993:51-52). These goods usually were sold to the plantation, although sales also were made off of the estate (McDonald 1993:54). Wood, which was required in large quantities for steam-powered sugar mills, was cut or gathered by slaves in the swamps and sold to the planters. Odd jobs were performed by slaves on Sundays or during other free time; they either were paid by the job, or by the day (McDonald 1993:60). Another crop that was gathered and marketed was Spanish moss, which was shipped from local stores to St. Louis or New Orleans, with the slaves responsible for the shipping charges (McDonald 1993:63,66-67). Through these and other means, slaves were able to accumulate capital or credit, and to purchase a variety of goods for their own use.

Flooding and Levee Construction

Although much of the settlement at Pointe Coupée was built on the natural levee, flooding was a persistent problem. The first record of a severe flood was in 1827; work on the first system of man-made levees began in the following year. Construction was completed in 1829 (Riffel 1983:44). By law, each planter was responsible for building the levee that protected his plantation (Point Coupée *Democrat*, July 28, 1860), and also had responsibility for maintaining the levee. According to an antebellum Pointe Coupée newspaper, preventing floods required ". . . constant vigilance on the part of our planters, who reside on the river, and the withdrawal of a vast amount of labor [i.e., slaves] from their fields. . ." (Pointe Coupée *Democrat* August 28, 1858).

Laws also required planters who lived along the Mississippi River not only to maintain the levee according to detailed specifications but also to establish a public road along the river. The regulations stated:

> Every owner of land on the banks of any river . . . are [sic] bound to give for public use a road of at least twenty-five feet between the ditches [i.e., in width], on the whole front of his property, and keep the same constantly in good order and repair, according to the existing ordinances, and such others as may hereinafter be passed by the Police Jury (Point Coupée *Democrat*, July 28, 1860).

The landowner had the legal responsibility to establish a public thoroughfare along the river. His slaves built and repaired the road just as they raised and maintained the levee.

There were a number of episodes of flooding during the first decades of the nineteenth century, but none seem to have been as severe as the flood of 1850-1851. According to Champomier's Statement of the Sugar Crop:

> There have been in this Parish (Pointe Coupée) the past season (1850) no less than seven Crevasses or sliding of Levees, which destroyed about 1500 hhds Sugar, besides all the Corn and Cotton on False River Island (Champomier 1851:5).

Champomier, stated that while a number of properties were "overflowed," the plantation of Mrs. J.U. Jarreau (Pecan Grove/Nina Plantation) was entirely overflowed. No sugar "was produced on the plantation for the following two years." The flood also destroyed the machinery of the sugar house; Mrs. Jarreau took the opportunity to convert from horse to steam power in 1851 (Champomier 1852:5).

During the Civil War, the levee system suffered from neglect and from suspected sabotage; both Federal and Confederate troops were accused. Crevasses occurred during the war, but all were downriver from the project area. A number of crevasses occurred in the later 1860s, caused by the weakened levees, and by the new lack of a ready labor force to repair them.

The next documented floods occurred in 1882 and 1884. In 1882, a flood broke the small protection levee that shielded the town of Water-

loo, approximately 1.6 km (1 mi) upriver from the project area (Riffel 1983;38). Although the waters devastated the community, they did less damage on False River Island, where planters salvaged a small but valuable sugar crop (Bouchereau 1882).

The flood of 1884, best known as the Morganza Crevasse, had dire effects on Pointe Coupée Parish. A new levee had been constructed in 1883, but it could not hold the rising waters. The levee first broke at Morganza, at some distance above the project area. Since slaves were no longer available for the dangerous work of stemming the crevasse, the state of Louisiana sent in convicts, but the prisoners could not contain the flow. Almost the entire levee line constructed in 1883 washed away (Goodspeed 1892:2:15-16).

The levee protecting Waterloo broke on March 28, 1884. When Evariste Chutz's house at Cook's Landing, at the mouth of False River, was swept away, his furniture ended up floating down False River until a practical local lady fished it out and dried it off. Waterloo, a small prosperous community before the flood, was destroyed, and only two houses were rebuilt (Riffel 1983:38). The flood also affected Nina Plantation and its neighbors. While Nina produced only 70 hogs heads of sugar in 1884, other planters on False River Island produced no sugar at all (Bouchereau 1884:28-2).

Just six years later, in 1890, the floodwaters rose again, and the levee broke in 12 places. Nevertheless, False River Island fared better than the rest of the parish. According to a newspaper account:

> The crops on the island of False river . . . are fine, but very grassy, not having been worked on account of the farmers being on the levees, most of the time for the past month (LPSM 1890:4:357).

By December 1890, state engineers were drawing up plans for a new levee, which would leave

> . . . a large portion of the [Nina] plantation, including the sugar house, residence, etc., behind the levee. The citizens of that neighborhood have had a meeting, and ask[ed] the state engineers . . . to strengthen the old levee instead of building a new one (LPSM 1891:6:441).

The neighborhood protested unsuccessfully; in 1891, construction of the relocated levee was begun.

CHAPTER IV

THE LAND TENURE OF NINA PLANTATION

The tract of land that incorporated Nina Plantation is bounded by the Mississippi River to the east, by the Upper Chenal of the False River to the north, by Grand Bay Plantation to the south, and by McClay Plantation to the west. Nina's acreage currently encompasses all or portions of Sections 15, 16, and 17, T4S, R11E, and Sections 90 and 91, T5S, R11E, in Pointe Coupee Parish. With the exception of Section 15, these boundaries have remained relatively constant since the early nineteenth century. This overview of land tenure focuses primarily on the current project area, in Section 16. A schematic representation of the land tenure history of Section 16, T4S, R11E is included below in Figure 8.

Please note that certain terms used in this chapter refer to archaic or seldom used units of measure. Among these terms is the arpent, equivalent in length to 58.54 m, or 0.92 of a "lineal acre" (63.57 m), and equivalent in area to 0.8464 of a "superficial acre" (0.40 ha) (Waddill n.d.). Another measurement term used in this chapter is the hogshead. According to the nineteenth century sugar crop records cited in this chapter, the antebellum hogshead held 1,000 lbs (454 kg) of sugar; after the Civil War, the hogshead more commonly held between 1,100 and 1,200 lbs (499 and 544 kg) of sugar (Bouchereau 1868-1877, 1877-1890; Champomier 1844-1846).

Bara Family Tenure: Late Eighteenth Century - 1822

The *American State Papers* list Jean Baptiste Bara, "alias Le Blond," as the owner of Sections 16 and 91, Claim No. 21, prior to 1782 (Dickins and Forney 1860:6:681, 1861:8:921). Research conducted during the previous Phase II investigations at Nina Plantation (Yakubik et al. 1994) indicated that Bara began accumulating his various Pointe Coupee properties ca. 1746. At the time of his death (April 8, 1782), Bara owned approximately 42 arpents frontage along the Mississippi River, which included land on both sides of the upper channel of the False River. The Bara residence, "described as being in poor condition," was located on the uppermost tract, which also included a storehouse, slave cabins, and various outbuildings. Descriptions of the related structures suggest that the plantation functioned as an indigo enterprise. The Bara plantation apparently served as an important river landing, since succession provisions included a public easement along the False River and assurance that a structure would be erected at the confluence of the False River channel and the Mississippi River to expedite import/export activities. This last stipulation probably marks the establishment of Cook's Landing and/or Anchor Landing, or possibly the community later called Waterloo (Yakubik et al. 1994:139-141).

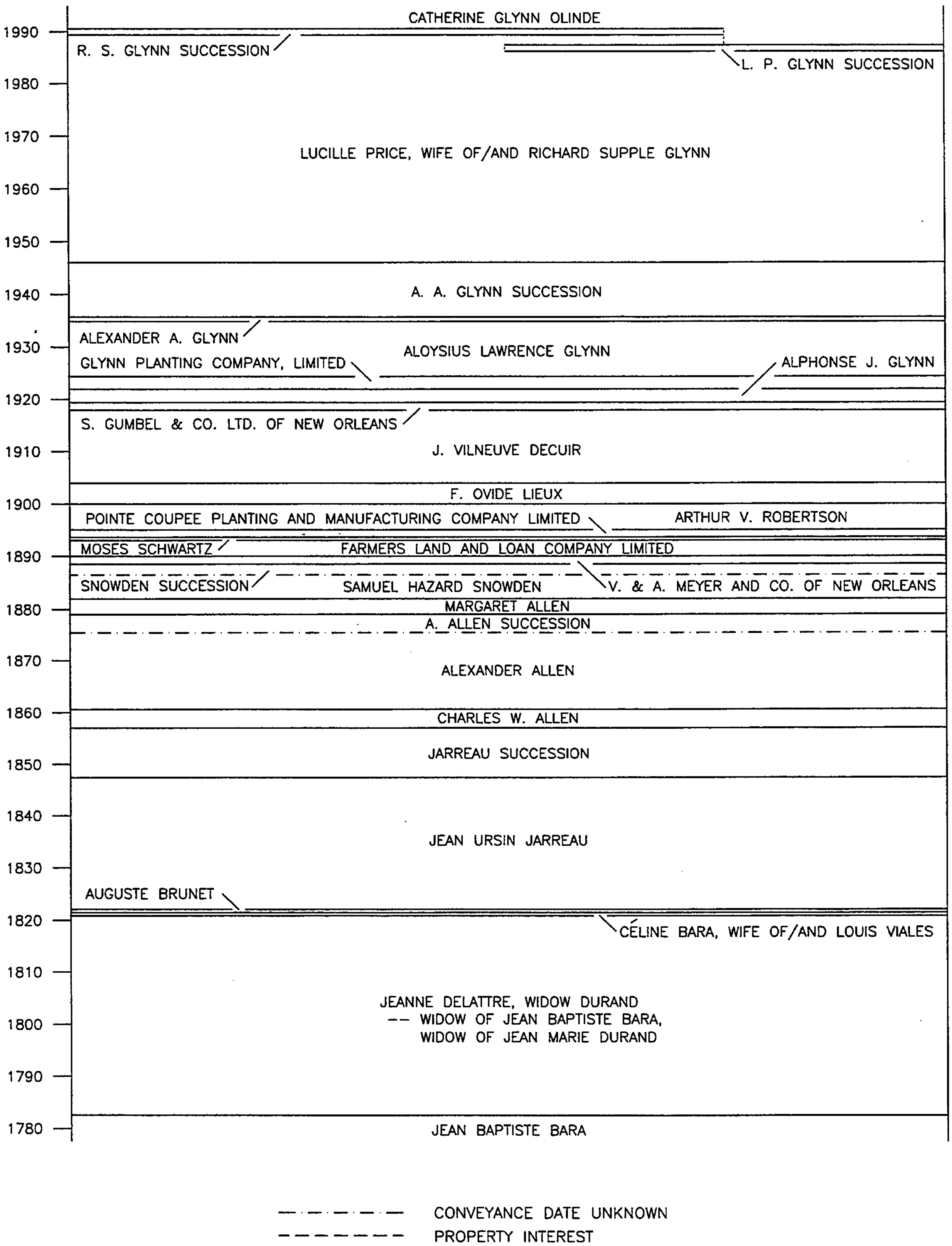


Figure 8. Schematic representation of the general land tenure history of Section 16, T4S, R11E, of Nina Plantation, Pointe Coupee Parish.

Following the death of Jean Baptiste Bara, his property "passed into the possession of his widow," and then proceeded through "regular successive conveyances" to Jean Ursin Jarreau, whose claim to Sections 16 and 91 (Claim No. 21) was confirmed ca. 1833-1835 (Dickins and Forney 1860:6:681, 1861:8:380; Louisiana Surveyor General 1854, 1858). Records indicate, however, that the Bara arpentage may have passed into the hands of the widow of Jean Baptiste Bara *fils* [son], rather than to the widow of Jean Baptiste Bara *pere* [father]. The Bara tracts were adjudicated on June 13, 1782 (two months after the death of Bara *pere*), to Jeanne Delattre, widow of Jean Baptiste Bara *fils, dit Le Blond* (Original Acts Book [OAB] 1819, No. 417, Pointe Coupee Parish Clerk of Court [PCPCC]; Yakubik et al. 1994:139-141). Although Jeanne Delattre Bara married a second time following her acquisition of the Bara property, she still was listed as "Widow LeBlond" in 1795 (Holmes 1970:361), and a contemporary parish survey (ca. 1816) recorded the property under the name Barra [sic]. By 1819, however, Jeanne Delattre was known as the widow of Jean Marie Durand (Figure 6). Following the death of her second husband, the Durand estate was inventoried on October 11, 1819. Among the listed properties was the 42-arpent by 40-arpent tract fronting the Mississippi River, bounded above by [Jean] François Porche and below by *petit Bayou.* Included in the estate inventory was the "principal house," which consisted of three rooms, two cabinets (small rooms placed at the back corners of the house), and two galleries; also recorded were a storehouse, detached kitchen, and other outbuildings, in addition to corn and cotton crops and to 32 slaves (OAB 1819, No. 417, PCPCC; Yakubik et al. 1994:142-144).

The tracts belonging to Widow Durand were surveyed by Pierre Louis L'Hermite during the years 1820-1823. The property that later was designated Sections 15 and 16, T4S, R11E, and Sections 91 and 92, T5S, R11E, was surveyed October 30, 1820, and divided into four lots (Figure 9). Neither the plat nor the survey text (Survey No. 60) provide any indication as to whether or not structures were located on this property. It should be noted, though, that both L'Hermite Surveys No. 66 (1821) and No. 112 (1823) of the land above the *Chenal supérieur de la Fausse Rivière* depict the *Maison* and *Magasin* on the riverfront property formerly owned by the Widow Durand and later designated Section 14, T4S, R11E. More than likely, these structures are the house and storehouse listed in the 1819 Durand estate inventory (L'Hermite 1818-1822, Nos. 56, 57, 60, and 66; 1822-1827, No. 112).

On February 22, 1821, the Widow Durand donated Lots 1 and 2 (Sections 15 and 92) to her minor grandchildren, the four children of her deceased son Nicolas Bara. On the same date, she donated Lots 3 and 4 (Sections 16 and 91) to Céline Bara, wife of/and Louis Viales, "an male in law to said minors." Lots 3 and 4 extended front along the Mississippi River and were bounded by the land of the Nicolas Bara minors, the tract belonging to parish judge Pierre Dormenon, the François Porche succession, and by *le petit bayou.* On August 27, 1822, Céline and Louis Viales sold Lots 3 and 4 to Auguste Brunet, the *Marchand* [dealer or tradesman] who had represented the widow of François Porche (lower bounding party) when the Bara/Durand property was surveyed and subdivided in 1820. Three weeks later, Brunet sold the tract to Jean Ursin Jarreau (Figure 9) (L'Hermite 1818-1822, No. 60; OAB 1820-1821, Vol. 1, Nos. 751, 752, and 753; OAB 1822, Vol. 2, Nos. 1169 and 1178, PCPCC).

Jarreau Family Tenure: 1822 - 1857

Born March 23, 1800, Jean Ursin Jarreau was the son of French merchantman navigator Jacques Jarreau, of Bordeaux, and Pointe Coupee native Marie Helene Tounoir. Jean Ursin Jarreau purchased the Durand Lots 3 and 4 on September 18, 1822, as a young man of only 22 years of age. Nine months following his acquisition of the tract, on June 25, 1823, Jarreau married Octavine LeBlanc, a local girl who had just turned seventeen, in a Catholic ceremony at the Church of St. Francis in Pointe Coupée. (Arthur and Kernion 1931:39; Bendernagel ca. 1966; Diocese of Baton Rouge ca. 1983:4:296).

Jean Ursin Jarreau's family expanded considerably after his marriage in 1823. Like other couples during the nineteenth century, the Jarreaus had numerous children and paid a heavy toll in infant mortality. When their firstborn child died, they buried the baby on November 12, 1824, probably in the old cemetery, now lost to

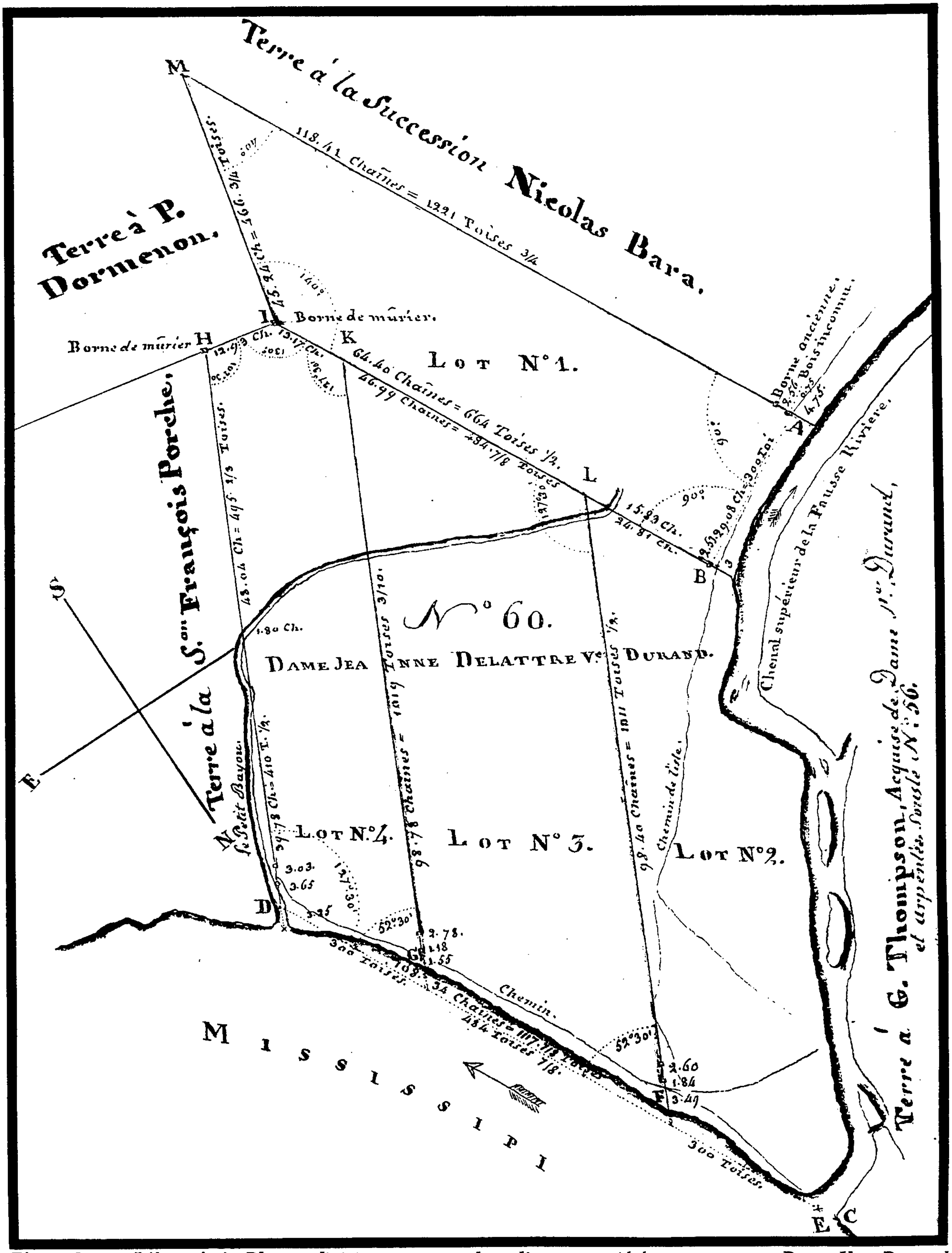


Figure 9. L'hermite's *Plan et division en quatre lots d'une propriété appartenant a Dame Vve. Durand* [1820], depicting the subdivision of the Bara/Durand property in Sections 15 and 16, T4S, R11E, and Sections 91 and 92, T5S, R11E (L'hermite 1818-1822, Survey No. 60). The project area is located within Lot No. 3 of the subdivision.

the river, at St. Francis Church (Diocese of Baton Rouge ca. 1983:4:296; Riffel 1983:60-63). No evidence of a family cemetery at the project area has been found. Within a few years, two sons were born to the union, Alexandre Jarreau (named for Octavine's father) ca. 1826, and Jean Ursin Jarreau, Jr., ca. 1828. These boys survived and were recorded in the census of 1830 (United States Bureau of the Census 1830). Many more children were to follow in the coming decade.

The census of 1830 also indicated the presence in the Jarreau household of a free white male, aged 70 to 80 years (United States Bureau of the Census 1830). The identity of this individual remains something of a mystery. The possibilities include Jean Ursin Jarreau's stepfather, John Henry Ludeling, who formerly served as Parish Judge, the chief administrative officer of Pointe Coupee (Riffel 1983:20). Another possibility is Jean Jarreau's father-in-law, Alexandre Paul Balthazar LeBlanc de Villeneuve, usually identified as Alexandre LeBlanc (Arthur and Kernion 1931:36). LeBlanc had served as Sheriff, Justice of the Peace, and member of the Police Jury in the parish (Riffel 1983:20). Wedding documents record Octavine's father still living at the time of her marriage (Diocese of Baton Rouge ca. 1983:4:296). He may have made his home with the married couple in his old age.

In 1826, Jean Ursin Jarreau commissioned an itinerant French artist, Louis Antoine Collas, who had established a shop in New Orleans during the decade, to paint portraits of the young planter, his wife, and a robust older man identified as Jacques Jarreau, father of Jean Jarreau (Mahé and McCaffrey 1987:82-83). These three portraits once hung at the Jarreau plantation, Pecan Grove; they now are included among the collections of the Louisiana State Museum. The paintings of Jean Ursin and Octavine depict a handsome, well-dressed young couple; the jewelry worn by Octavine adds to the impression of economic substance that the portraits convey. Executed with some professional skill, the paintings probably constituted some of the most elaborate furnishings in the house that Jarreau built for his bride in the project area (Figures 10, 11, and 12).

According to at least two sources, Jacques Jarreau, Jean Ursin's father, actually died some years before Collas painted his portrait. A Jarreau family genealogy records that he died soon after the birth of his second son, Bruno. According to this family source, Jean Ursin Jarreau was raised by his stepfather, John Henry Ludeling, a German-born attorney of Pointe Coupee Parish. By tradition, Ludeling sent Jean Ursin to Germany for schooling (Bendernagel ca. 1966). Whatever the case, the records of the Catholic Diocese of Baton Rouge indicate that both parents of Jean Ursin Jarreau had died by the time of his marriage in 1823 (Diocese of Baton Rouge ca. 1983:4:296). These diocesan records confirm that Collas would have painted Jacques Jarreau posthumously in 1826; however, the portrait seems remarkably detailed not to have been painted from life. If by chance Jarreau descendants identified the sitter incorrectly as the father of Jean Ursin Jarreau, other possible subjects of the painting include his father-in-law, Alexandre LeBlanc, or his step-father, John Henry Ludeling, a wealthy planter who owned 74 slaves in 1820 (Figure 12) (United States Bureau of the Census 1820).

At the time of the Jarreau acquisition of Durand Lots 3 and 4 in September 1822, the property measured 26 arpents, 4 *toises* [fathoms], and 7 *huitiemes* [eighths] (a total of about 5,024 ft) fronting the Mississippi River, by an unequal depth of 34-35 arpents. The tract was located on the island of the False River and was bounded by lands belonging to the minor children of Nicolas Bara, the widow of François Porche, and Pierre Dormenon (OAB 1822, Vol. 2, No. 1178, PCPCC). The Jarreau ownership of the property, through the former Bara claim, was confirmed by the U.S. government ca. 1833-1835. According to Class C Claim No. 21, this land above "*Petit bayou*" had been "constantly and uninterruptedly inhabited and cultivated, by the said claimant [Jarreau] and those under whom he holds, from the said year 1782 down to the present time" (Dickins and Forney 1860:6:681, 1861:8:380; Louisiana Surveyor General 1854, 1858).

It was undoubtedly during the Jarreau possession that the Nina plantation house was built on the Section 16 riverfront. As previously noted, the Durand estate inventory and L'Hermite surveys indicate that the Bara/Durand house was built prior to 1819 on the property above the upper channel of the False River (Section 14, T4S, R11E), and subsequent documents pertaining to the Jarreau acquisition give no indication of any

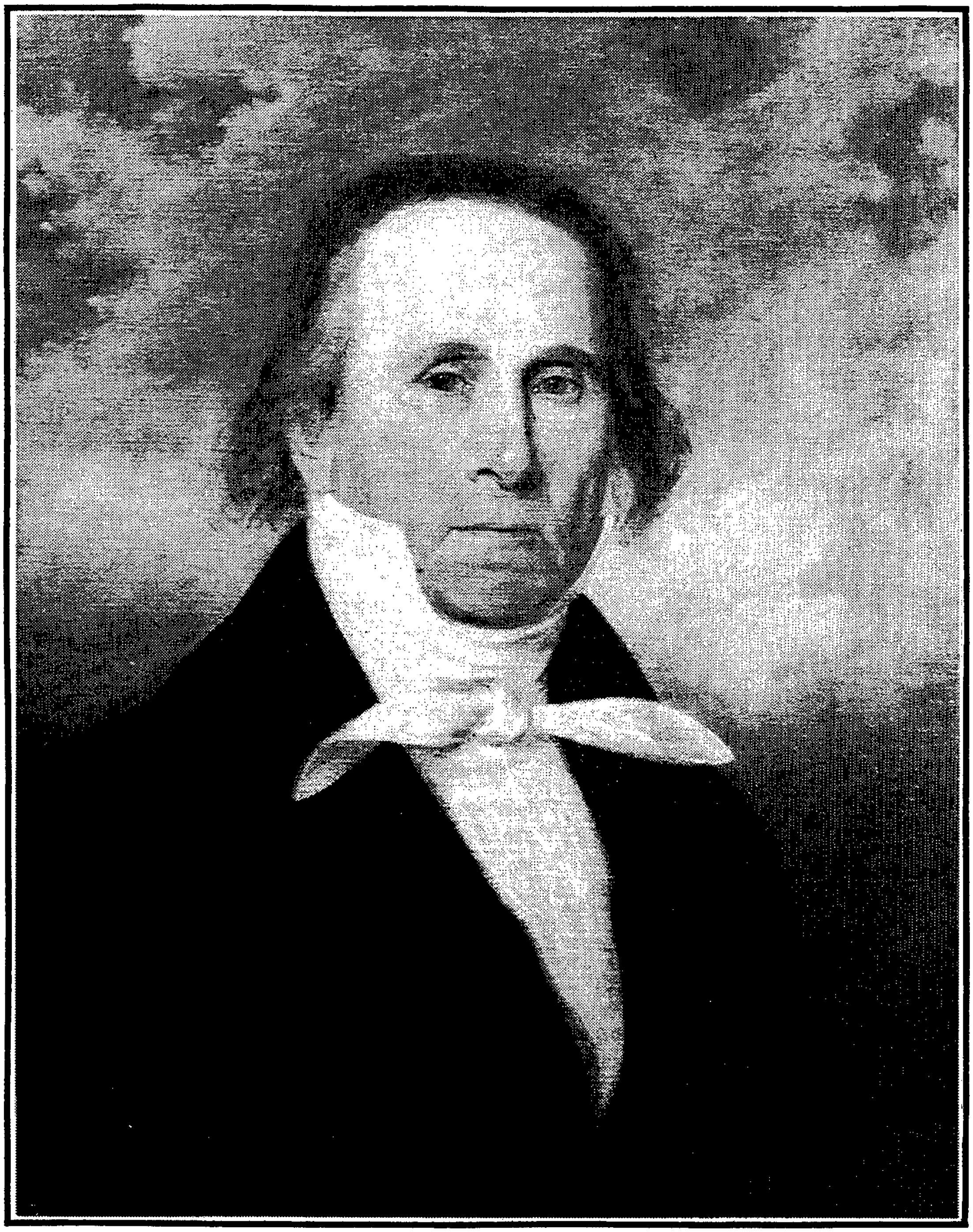


Figure 10. Portrait of Jacques Jarreau, 1826 by Louis Antoine Collas (from the Collection of the Louisiana State Museum).

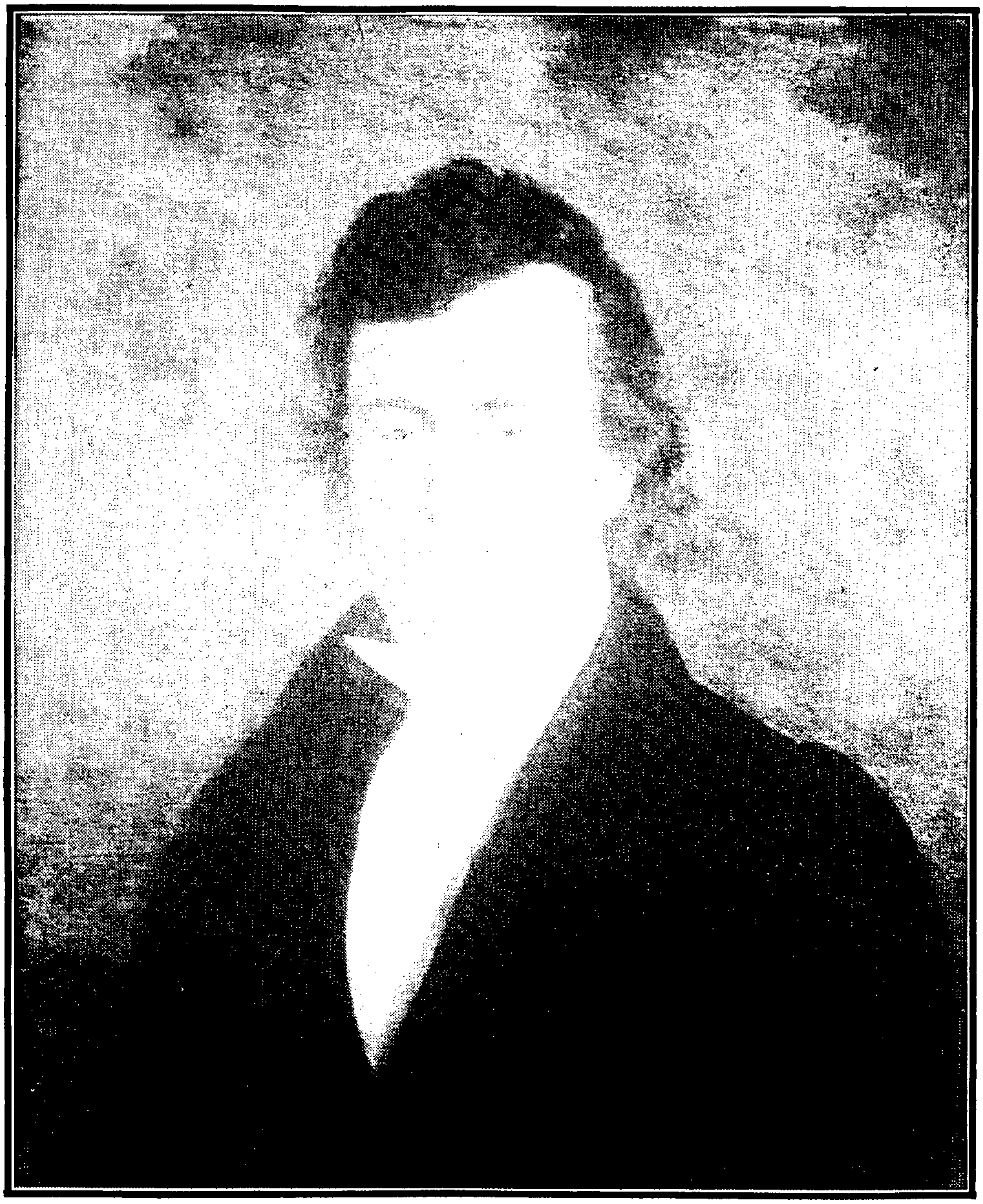


Figure 11. Portrait of Jean Ursin Jarreau, 1826, by Louis Antoine Collas (from the Collection of the Louisiana State Museum).

Figure 12. Portrait of Octavine LeBlanc, wife of Jean Ursin Jarreau, 1826, by Louis Antoine Collas (from the Collection of the Louisiana State Museum).

structure existing below the False River channel in the current project area. Various records do display evidence, though, that this lower tract was part of a thriving sugar plantation during the Jarreau years.

Jarreau added Section 17, T4S, R11E, and the upper portion of Section 90, T5S, R11E, to his arpentage in early 1828, through purchase from Evariste Porche (apparently a relative of previous owner François Porche, who was the son of original claimant Vincent Porche). According to previous research, the Porche property functioned as a cotton plantation in 1803 (Louisiana Surveyor General 1854, 1858; OAB 1857, Vol. 2, No. 4605, PCPCC; Yakubik et al. 1994:144, 146, 165-166, 170). By 1829, though, the V. Porche property was under cane cultivation, yielding a 22-hhd sugar crop that year. It is unclear if this listing referred to the Porche plantation at the southern boundary of the Jarreau property or to another Porche-owned tract. Very few False River sugar plantations were recorded on the sugar statements of the late 1820s; Jarreau was not among the listings at that time (Degelos 1892:65).

Neither slaves nor structures were described in the 1822 conveyance of the Bara/Durand lots to Jarreau; however, it is apparent that by 1830, the Jarreau place was a working plantation. In addition to his immediate household of five, the census of 1830 listed Jean Ursin Jarreau as the owner of 52 slaves. This number included 7 males and 8 females under 10 years of age, 7 males and 4 females "of ten and under twenty-four" years of age, 10 males and 5 females "of twenty-four and under thirty-six" years of age, 6 males and 2 females "of thirty-six and under fifty-five" years of age, and 3 females "of fifty-five and under one hundred" years of age (United States Bureau of the Census 1830).

By 1845, the Jarreau tract was an established sugar plantation. Jean Ursin Jarreau died at about 48 years of age on September 3, 1847; he was buried the next day, probably at the cemetery of St. Francis Church. His widow, Octavine, assumed charge of the plantation and their large family. During their 24-year marriage, she had borne her husband at least 11 children, the youngest of whom was two years old in 1847 (Bendernagel ca. 1966; Diocese of Baton Rouge ca. 1983:4:296, 1985:5:323, 1986:6:336-337, 1988:8:306). When the census of 1850 was taken, the three oldest children, Alexander, John, and Emile, had grown to manhood (over 18 years of age) but still lived at home. In all, the census enumerated 10 children in the Jarreau household in 1850 (United States Bureau of the Census 1850).

After the death of her husband, Octavine LeBlanc Jarreau assumed charge of the plantation, as many women of Louisiana had done before and have done since. Widow Jarreau ran the plantation until her death in the spring of 1856; it was during her management that the property first was listed as Pecan Grove Plantation, ca. 1853-1854. In the 1849-1850 season, Mrs. Jarreau "and others" harvested a cane crop of 213 hhd. During the following year (1850-1851), though, the Jarreau place was entirely overflowed; no crop was listed until the 1852-1853 harvest, which generated 437 hhd of sugar, a combination of the Jarreau crop (415 hhd) and the yield (22 hhd) of rear neighbor Ovide Bara (Bara/Durand Lot No. 1). Ca. 1851, Mrs. Jarreau replaced the horse-powered apparatus in her sugar house with a steam engine. Despite the advanced machinery, the Jarreau sugar yield decreased after the 1852-1853 harvest, from 415 hhd in that season to only 148 hhd in 1855-1856. The Estate of Mrs. J. U. Jarreau produced no listed sugar crop in 1856-1857 (Champomier 1844-1846, 1849-1857; Diocese of Baton Rouge 1988:8:306).

On April 18, 1857, the heirs of Jean Ursin Jarreau and his widow, Octavine LeBlanc – Jacques Emile, Leon, Augustin Ernst, Marie Leonie, Joseph Felix, Helena Ida, Marie Alice, and Jean Ursin Jarreau, Jr. (many of whom resided in New Orleans by that time) – sold Pecan Grove Plantation for the sum of $116,600.00 to Charles W. Allen of Pointe Coupee Parish (Bendernagel ca. 1966; Diocese of Baton Rouge 1985:5:323; 1986:6:336-337; OAB 1857, Vol. 2, No. 4605, PCPCC). The sugar plantation then consisted of approximately 1,054 arpents "in the Island;" it was bounded front by the Mississippi River, rear by Ovide Bara, above by Dr. Rabel et al. (formerly Ursin Sicard), and below by A. L. Mahoudeau. Listed improvements on the property were:

> . . . two dwelling houses, one containing ten and the other five spacious rooms, also negro cabins, kitchen, corn house, stable & carriage house, sugar house with steam engine, cotton gin, all implements of husbandry, and the pending crop (OAB 1857, Vol. 2, No. 4605, PCPCC).

Also included in the 1857 sale to Allen were 86 slaves, seven of whom were in the possession of members of the Jarreau family and were to be reconveyed to those parties as per privately agreed mortgage terms. Interestingly, this document made note of the fact that "Some of the . . . slaves were acquired by him [Jean Ursin Jarreau] from sundry persons at different times, more than twenty five years ago and the remainder of said slaves were born on said [Pecan Grove] plantation." The act of sale also stated that four of the slaves, Louisa and her three children, were "subject to the will of the late Julien Poydras . . . from which it results that the said slaves are to become free at a certain period and under certain conditions" (Table 4) (OAB 1857, Vol. 2, No. 4605, PCPCC). According to the Poydras will, his slaves were to be emancipated 25 years following his death, which occurred in 1824; thus, Louisa and her children were scheduled for freedom on the brink of the Civil War, only two years after their acquisition by Allen (Hansen 1971:631).

Table 4 lists the Jarreau slaves by name, age, and occupation. The Pecan Grove lands were worked by 41 field hands overseen by one "driver." One field hand, Baptiste, also doubled as a sugar maker; another, Jerry, apparently was invaluable to plantation maintenance, for he was listed as engineer, blacksmith, and rough carpenter, in addition to field hand. Another skilled laborer, Bayson, served as rough blacksmith and sugar maker. Six slaves worked in the Jarreau domicile as "house servants," and two of them augmented their household duties with the jobs of coachman and laundress, respectively. Pecan Grove Plantation also employed Marie as sick nurse and Jenny as cook and midwife. These last-named women probably stayed busy with 27children and an adult slave population of 59 to attend. Eight slaves were listed without occupations; however, all but one (who was elderly) were mothers of minor children (Table 4) (OAB 1857, Vol. 2, No. 4605, PCPCC).

Table 4. List of Slaves Included in the Conveyance of Pecan Grove Plantation from the Jarreau Heirs to Charles W. Allen (Original Acts Book 1857, Vl. 2, No. 4605, Pointe Coupee Parish Clerk of Court).

NAME	AGE	OCCUPATION OR IDENTIFICATION
Bill	59 yrs	Field hand
Nathan	55 yrs	Field hand
Figaro	65 yrs	Field hand
Jerry	56 yrs	Engineer, blacksmith, rough carpenter, and field hand
Léveillé	74 yrs	---
Oliver	52 yrs	Driver
Big John	48 yrs	Field hand
Henson	48 yrs	Field hand
Jenny	55 yrs	Cook and midwife
Frank	35 yrs	Field hand
Françoise	18 yrs	Field hand
Eugénie	17 yrs	Field hand
Rose*	15 yrs	House servant (to be reconveyed to Ida Jarreau for $800.00)
Emma	12 yrs	Field hand
Baptiste	28 yrs	Field hand and sugar maker
Ester	24 yrs	Field hand
Charles	4 yrs	Child of Ester
Pierre	1 yr	Child of Ester
Rosette	23 yrs	Field hand
Joséphine	3 yrs	Child of Rosette
Renny	1 yr	Child of Rosette
---	Infant	Child of Rosette
Jude	33 yrs	Field hand
Anna	40 yrs	Field hand
Frederick	21 yrs	Field hand
Henry	21 yrs	Field hand
Big Aimés	66 yrs	Field hand
Hypolite	21 yrs	Field hand
Bayson	41 yrs	Rough blacksmith and sugar maker
Tom	37 yrs	Field hand
Codio*	37 yrs	Field hand (to be reconveyed to [Louise] Corrine Jarreau, wife of Jacques Emile Jarreau, for $1,400.00)
Daniel	37 yrs	Field hand
Mathieu	32 yrs	Field hand
Little John	27 yrs	Field hand
Big Sam	37 yrs	Field hand
Antoine	28 yrs	Field hand
Jessy	21 yrs	Field hand
Oscar	18 yrs	Field hand
Abraham	17 yrs	Field hand
Lucien (on list)/ Lucia (in text)*	18 yrs	House servant (to be reconveyed to [Louise] Corrine Jarreau, wife of Jacques Emile Jarreau, for $1,100.00)
William	15 yrs	Field hand
Harry	34 yrs	House servant and coachman
Allen	15 yrs	Field hand
Narcisse*	47 yrs	Field hand (to be reconveyed to Joseph Felix Jarreau for $800.00)
Joseph*	15 yrs	Field hand (to be reconveyed to [Louise] Corrine Jarreau, wife of Jacques Emile Jarreau, for $800.00)

Table 4, continued

NAME	AGE	OCCUPATION OR IDENTIFICATION
Jane	47 yrs	Field hand
Sylvie*	40 yrs	House servant, washer, and ironer (to be reconveyed to Ida Jarreau for $1,000.00)
Marie	47 yrs	Sick nurse
Angélina	20 yrs	Field hand
Sylvie	8 mos	Child of Angélina
Sarah	15 yrs	House servant
Caroline	14 yrs	Field hand
Rachel*	14 yrs	Field hand (to be reconveyed to [Louise] Corrine Jarreau, wife of Jacques Emile Jarreau, for $700.00)
Adéle	14 yrs	Field hand
Gabriel	13 yrs	Field hand
Désirée	12 yrs	Field hand
Victorine	38 yrs	House servant, etc.
Victor	11 yrs	Child of Victorine
Marie Louise	8 yrs	Child of Victorine
Lucia	6 yrs	Child of Victorine
Cecile	13 yrs	Field hand
Nancy	34 yrs	—
Victorine	11 yrs	Child of Nancy
Félicienne	6 yrs	Child of Nancy
Venne	2 yrs	Child of Nancy
Anny	37 yrs	—
Elizabeth	11 yrs	Child of Anny
Juliette	6 yrs	Child of Anny
Little Aimée	40 yrs	—
Marie	6 yrs	Child of Little Aimée
Paul Joseph	2 yrs	Child of Little Aimée
Diana	34 yrs	—
Louis	9 yrs	Child of Diana
Zenón	6 yrs	Child of Diana
Nancy	28 yrs	—
George	5 yrs	Child of Nancy
Louis	2 yrs	Child of Nancy
Amélie	37 yrs	—
Rebecca	2 yrs	Child of Amélie
Louisa**	33 yrs	—
Anaïs**	14 yrs	Child of Louisa
Louise**	11 yrs	Child of Louisa
Amélie**	1 yr	Child of Louisa
Adéline	10 yrs	Orphan
John Wistley	5 yrs	Orphan
Henrietta	3 yrs	Orphan

* Reconveyed to Jarreau family.
** Subject to terms of Julien Poydras will.
— Information not given.

Allen Family Tenure: 1857 - 1882

The Allen family held tenure at Pecan Grove Plantation from April 1857 through early 1882. Within a year of the Allen acquisition, the property name had been changed to Nina Plantation. Philadelphia native Charles W. Allen purchased the place from the Jarreau family in 1857 (Figure 7), but sold the plantation on November 16, 1860, to Alexander Allen, who retained title until his death in 1870. Nina Plantation remained part of the Alexander Allen estate through the mid-1870s, when Margaret Allen took over management and, later, ownership of the property; she held the acreage until February 1882. During the Allen tenure, it appears that the Allens ran the plantation as a family partnership, rather than as individual owners. Civil War accounts and maps referred to Charles W. Allen as the owner, while census records and sugar and rice reports during the Allen tenure often listed the Allens as co-owners, or alternately specified Wright, Allen & Co. as "planter" at Nina Plantation. Wright, Allen & Co. (H. M. Wright and Charles W. Allen) was a New Orleans-based "commission firm" that branched into Louisiana and Texas planting interests. After the beginning of the Civil War, Charles W. Allen apparently confined his attention to his Bayou Fordoche plantation (west of Nina), also in Pointe Coupee Parish (Goodspeed 1975:248; *Louisiana Planter and Sugar Manufacturer* [*LPSM*] 1891:6:264).

Charles W. Allen sold Nina Plantation on November 16, 1860, to Alexander Allen (of Pointe Coupee Parish). The property at that time was described as 1,050 superficial arpents "cultivated in sugar cane" on the Island of False River; the tract fronted the Mississippi River and was bounded above by Ursin Sicard and Savinieu Pourciau, below by A. L. Mahoudeau, and rear by Ovide Bara. Along with the land, Alexander Allen also purchased all buildings and improvements, 87 slaves, and all plantation mules, horses, "horned cattle," sheep, hogs, farming utensils, corn, and fodder (Conveyance Book 1859-1861, Folio 499, Entry No. 6698 [COB 1859-1861:499, No. 6698], PCPCC).

According to the census of 1860, Alexander Allen was a Pennsylvania-born planter residing in Pointe Coupee Parish; however, his listed acreage (400 improved acres and 1,409 unimproved acres, or about 2,137 total arpents), crop figures, and number of slaves (143) indicate ownership at that time of a plantation considerably larger than Nina (probably the Allen plantation on Bayou Fordoche). When the census was taken, Nina Plantation apparently remained in the possession of Charles W. Allen, or his business interests. The 1860 record registered an unidentified plantation owned by Wright and Allen, with 86 slaves and 22 slave

dwellings, which contained 430 improved acres and 450 unimproved acres (a total of approximately 1,040 arpents) valued at $40,000.00, with farming implements and machinery valued at $10,000.00. These figures are more characteristic of Nina Plantation than those recorded under Alexander Allen. Listed livestock in 1860 were 6 horses, 38 asses and mules, 4 "milch" cows, 3 working oxen, and 12 "other cattle;" the crops that year included 4,000 bu Indian corn, 224 hhd cane sugar (1,000 lbs each), and 16,000 gal molasses (Menn 1964:316-317, 322-323).

The sugar harvest at Pecan Grove/Nina Plantation "waxed and waned" through the Allen family tenure of the property. Table 5 catalogs the plantation sugar crop, beginning with the Charles W. Allen acquisition in 1857 and ending in 1882 with the management/ownership of Margaret Allen. During the postbellum years, the sugar house was described as wooden until the 1880-1881 crop season, when a new one apparently was built by steam and kettle apparatus 1868-1882 (Bouchereau 1868-1877; Bouchereau 1877-1882; Champomier 1857-1862).

The property value of Nina Plantation apparently followed the fortunes of the seasonal sugar crops. Like other Pointe Coupee planters, Wright, Allen & Co. hit a peak year during the 1861-1862 harvest with a yield of 549 hhd. Only a year earlier, when Charles Allen sold Nina to Alexander Allen (November 1860), the plantation reached its highest conveyance valuation at $180,000.00, probably a reflection of successful crop seasons. Over the next two decades, the sugar yield plummeted, as did the property's appraisal. When Margaret Allen sold Nina Plantation in early 1882, the purchase price had dropped to $29,000.00, with vendor's lien, while the sugarharvest that season brought in only 110 hhd (Table 5; Figure 13) (Bouchereau 1868-1917; Champomier 1844-1862; COB 1859-1861:499, No. 6698; COB 2:188, No. 12825, PCPCC).

Alexander Allen died in late 1870, although his succession was not settled until 1879. He continued to be listed as the recorded "occupant" of Nina Plantation in the annual sugar and rice reports through 1874-1875; he was followed by C. W. Allen in 1875-1876, and then by Mrs. M.

Table 5. Sugar Production at Pecan Grove/Nina Plantation During the Allen Family Tenure of the Property (Bouchereau 1868-1877; Bouchereau 1877-1882; Champomier 1857-1862).

CROP YEAR	PLANTER / OCCUPANT	NO. OF HOGSHEADS
1857-1858	C. W. and A. Allen*	123 122**
1858-1859	Wright, Allen & Co.	511 515**
1859-1860	Wright, Allen & Co.	230
1860-1861	Wright, Allen & Co.	135
1861-1862	Wright, Allen & Co.	549
1868-1869	A. Allen	61 (68,625 lbs sugar; 5,250 gal molasses)
1869-1870	A. Allen	125 (142,500 lbs sugar; 8,750 gal molasses)
1870-1871	A. Allen	152 (170,250 lbs sugar; 12,096 gal molasses)
1871-1872	A. Allen	95
1872-1873	A. Allen	–
1873-1874	A. Allen	56
1874-1875	A. Allen	83
1875-1876	C. W. Allen	72
1876-1877	Mrs. M. Allen	103
1877-1878	Mrs. M. Allen	86
1878-1879	Mrs. M. Allen	149
1879-1880	Mrs. M. Allen	173
1880-1881	Mrs. M. Allen	170
1881-1882	Mrs. M. Allen	110

* Listed as Pecan Grove Plantation.

** Figure listed in the Pointe Coupée *Democrat*, February 26, 1859.

Allen during the 1876-1877 season (Table 5) (*Commercial Bulletin* 1870:1). The Allen estate was adjudicated on February 13, 1879, to Margaret Allen, who held Nina Plantation for the next three years (COB 1877-1879:538, No. 11664; COB 2:188, No. 12825, PCPCC).

As previously noted, when Charles W. Allen purchased Pecan Grove Plantation on April 18, 1857, the listed improvements consisted of two dwellings (one 10-room and one 5-room), "negro cabins," a kitchen, corn house, stable and carriage house, sugar house with steam engine, cotton gin, farming equipment, and the season crop (OAB 1857, Vol. 2, No. 4605, PCPCC). By February 13, 1879, when Nina Plantation was adjudicated

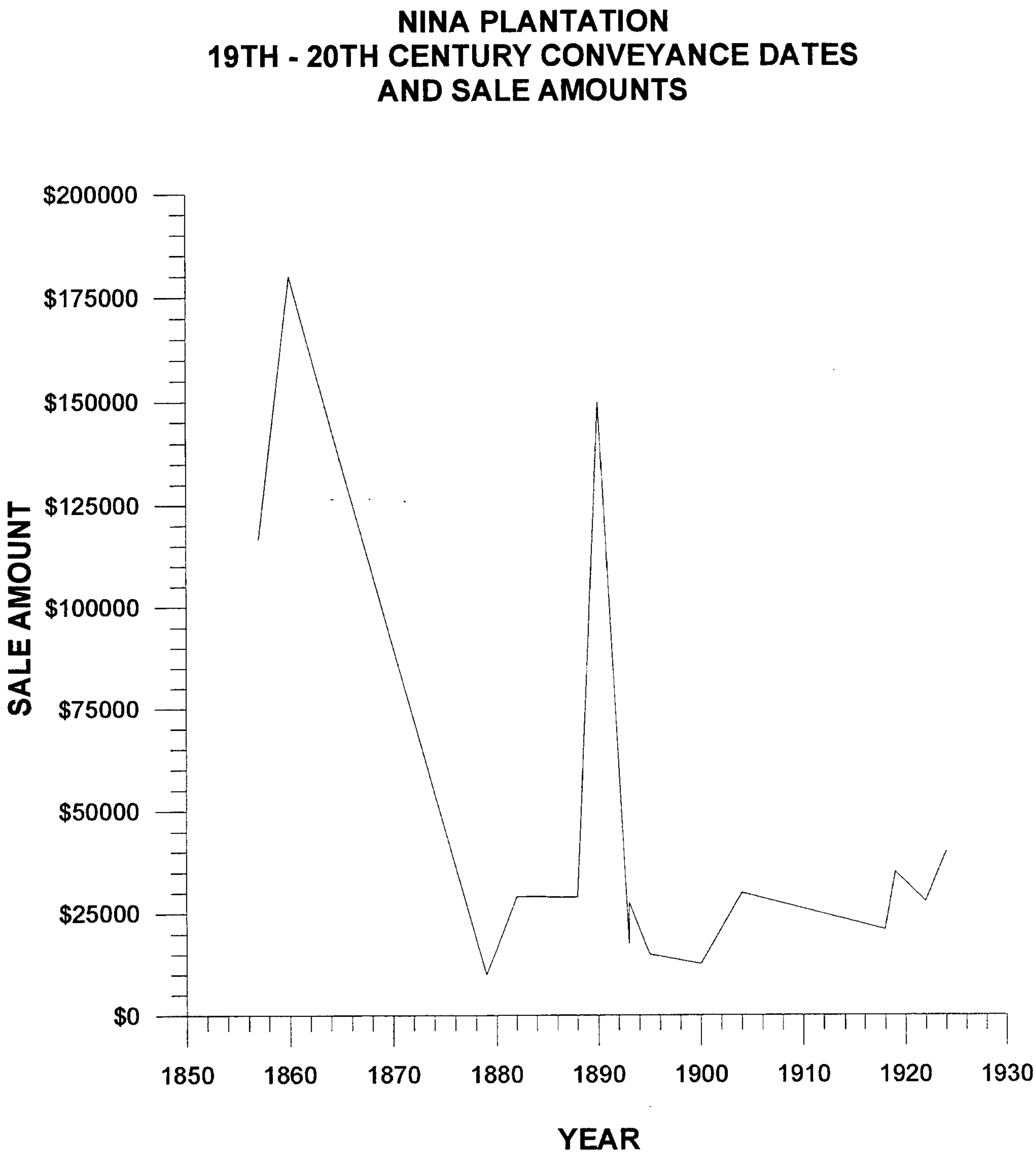


Figure 13. Conveyance amounts for Nina Plantation 1857 - 1924 (Conveyance records, Pointe Coupee Parish Clerk of Court).

to Margaret Allen, many of the same structures remained – "two dwelling houses, sugar house, stables, barns and cabins, etc.;" the Alexander Allen estate also included a number of "stock mules," farming utensils, four wagons, and one cart. The Nina property remained in the possession of Margaret Allen for nearly three years, after which she sold Nina Plantation (through her agent and brother, Charles William Allen, of New Orleans) to Samuel Hazard Snowden of Wilkinson County, Mississippi (Figure 14) (COB 1877-1879:538, No. 11664; COB 2:188, No. 12825, PCPCC).

Nina Plantation during the Civil War

Although there were no major battles or skirmishes in the project vicinity during the Civil War, the False River country figured prominently in scouting and foraging activities because of its location across the Mississippi River from Port Hudson, which fell to Union forces on July 8, 1863, following a six-week siege. Both the Waterloo and Hermitage landings were destination points for military movements through the region (Figure 15). Positioned between the two landings, Nina, or Pecan Grove, Plantation became part of the "tramping ground" for both Confederate and Federal troops (Edmonds 1984:127, 156-157).

The spring of 1863 marked the first recorded military activity through Nina Plantation. In late March of that year, Captain James M. Magee of the Second Company, Massachusetts Unattached Cavalry, was ordered on a reconnaissance expedition through the eastern False River country. Magee bivouacked downriver at the Winter plantation (probably Arbroath), then with the direction of a "creole" prisoner who once lived in the area, he rode to Hermitage Landing and to the False River (Edmonds 1983:190-195; U.S. Secretary of War [*OR*] 1886:15:268). An excerpt from the Magee report of the scouting party, dated March 24, 1863, reads as follows:

> I . . . proceeded to the Hermitage Landing, a point at the head of the lower mouth of the False River, and nearly opposite Port Hudson. . . . . On discovering no enemy at the Point [Fausse, or False, Point, directly across the river from Port Hudson], where a considerable force was found two days before, I moved my command forward to the dike where the rebel steamer *Hope*, loaded with 600 barrels of molasses, lay, which . . . I burned with its freight. I then left a portion of my men in the rear and proceeded with the balance to the junction of the False and Mississippi Rivers (Hermitage Landing), where I found over 1,000 barrels of molasses, all of which I destroyed or rolled into the river (*OR* 1886:15:268) (Figures 16 and 17).

In reality, the "rebel steamer" belonged to French tradesman Charles Petitfils, whose vessels *Faith* and *Hope* carried on private transport with the False River planters. The Petitfils boats delivered local plantation crops to the lower False River dike, from which point they were transferred to larger riverboats for conveyance to downriver markets. Because of the upper and lower dike system, there was no water passage from False River to the Mississippi, making it impossible for the *Hope* to carry supplies to Port Hudson. On the other hand, Hermitage and Waterloo landings were considered important shipping connections between the Atchafalaya country to the west and the Mississippi River; consequently, while the Federal motives were sound, the Magee attack was largely on an unoffending transport (Edmonds 1983:195-197; French and American Claims Commission [FACC] 1883, No. 292; *OR* 1896:48[2]:1261-1262).

The Magee report of the expedition to Hermitage and Waterloo landings continued:

> At this point [Hermitage Landing] I found a rebel machine-shop, at present used as a repair-shop for guns. This was burned, with its contents, together with Government granary, containing 15,000 barrels of corn, intended for Port Hudson. After destroying all the property, including a drugstore, having a large assortment of valuable medicines, and some outbuildings, one the post-office, I then proceeded to two or three different points on the Mississippi, where I had a full view of the river 4 or 5 miles above Waterloo. Neither the *Hartford* nor *Albatross* [Admiral Farragut's ships, previously sighted at Waterloo] were in sight, and no accurate information could be obtained from either whites or contrabands of their whereabouts (*OR* 1886:15:252, 268) (Figures 16 and 17).

En route upriver from Hermitage Landing, the Massachusetts troops crossed Pecan Grove Plantation (although called Nina by this time, apparently the plantation remained commonly

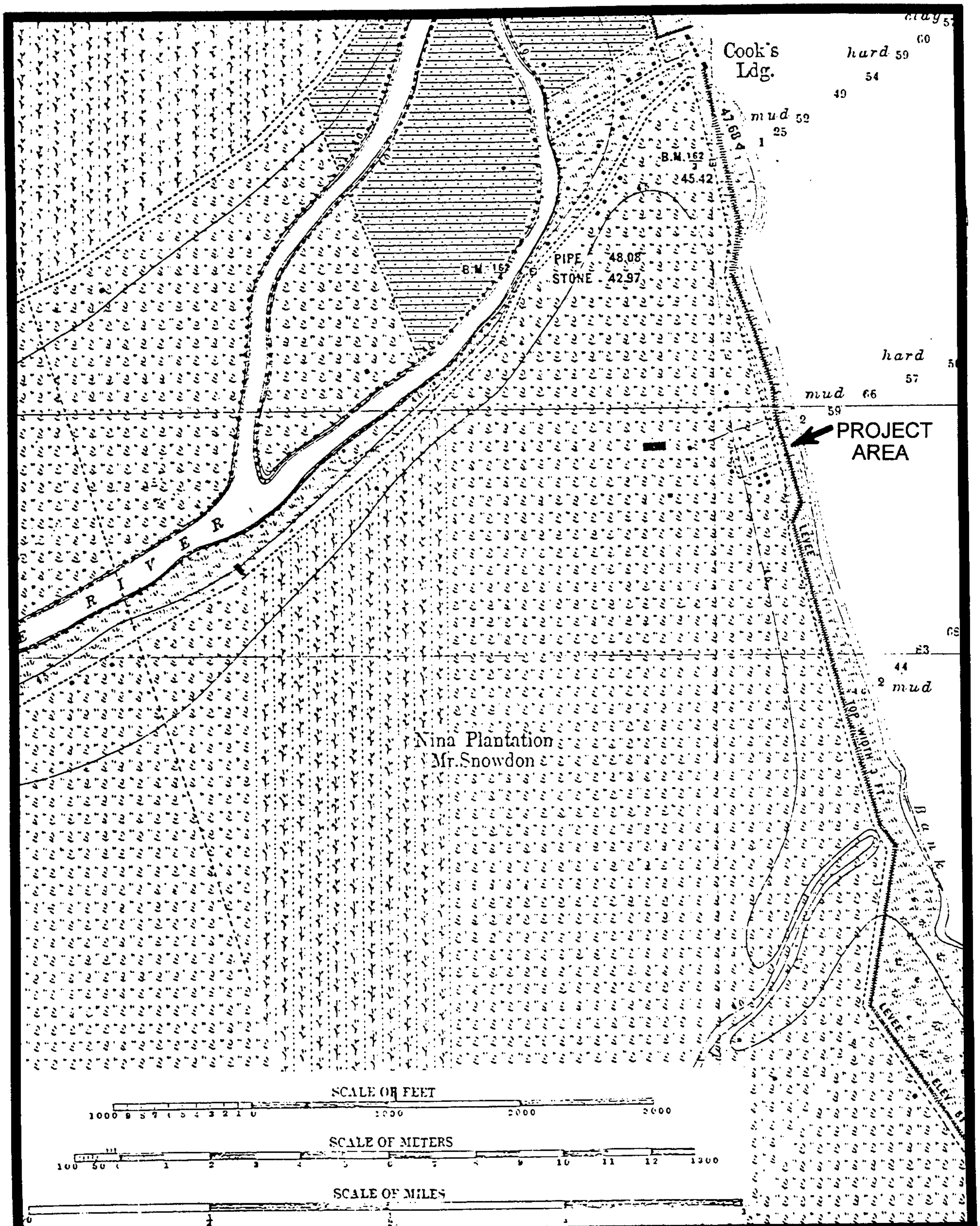


Figure 14. Excerpt from the Mississippi River Commission's *Survey of the Mississippi River*, Chart No. 143 [1879-1883], depicting Nina Plantation structures and Cook's Landing.

Figure 15. Excerpt from Banks' *Department of the Gulf, Map No. 8: Atchafalaya Basin* [1863], depicting Port Hudson and the False River country.

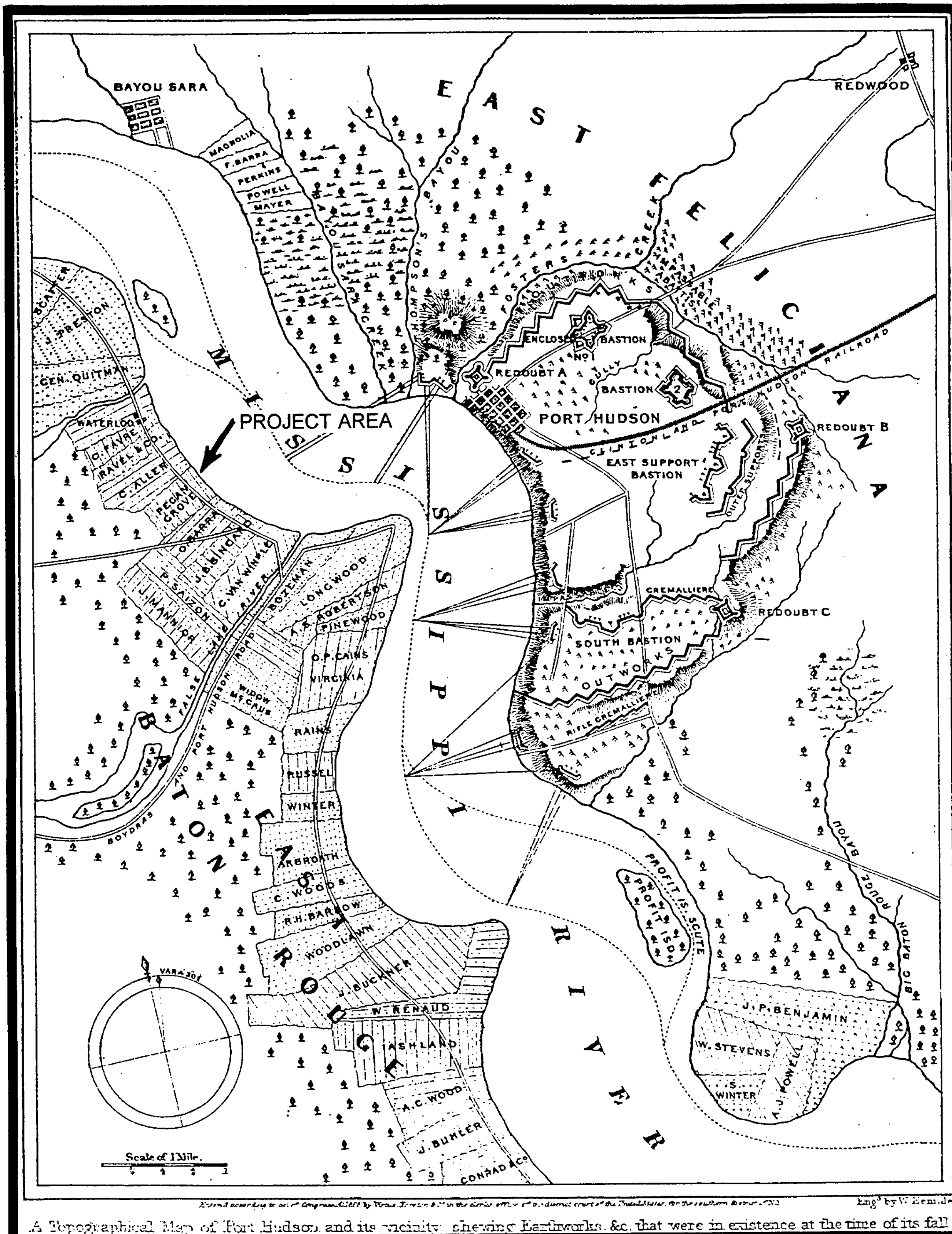


Figure 16. Sholl's *Port Hudson and Its Defences* [sic], *Constructed and Engraved to Illustrate "The War with the South"* [ca. 1863] (vol. 3, 1862-1867, by Robert Tumes). Please note that the village of Waterloo and C. Favre's plantation erroneously have been placed below the Upper Chenal of False River; additionally, the C. Allen property and Pecan Grove were depicted as two separate plantations, rather than one.

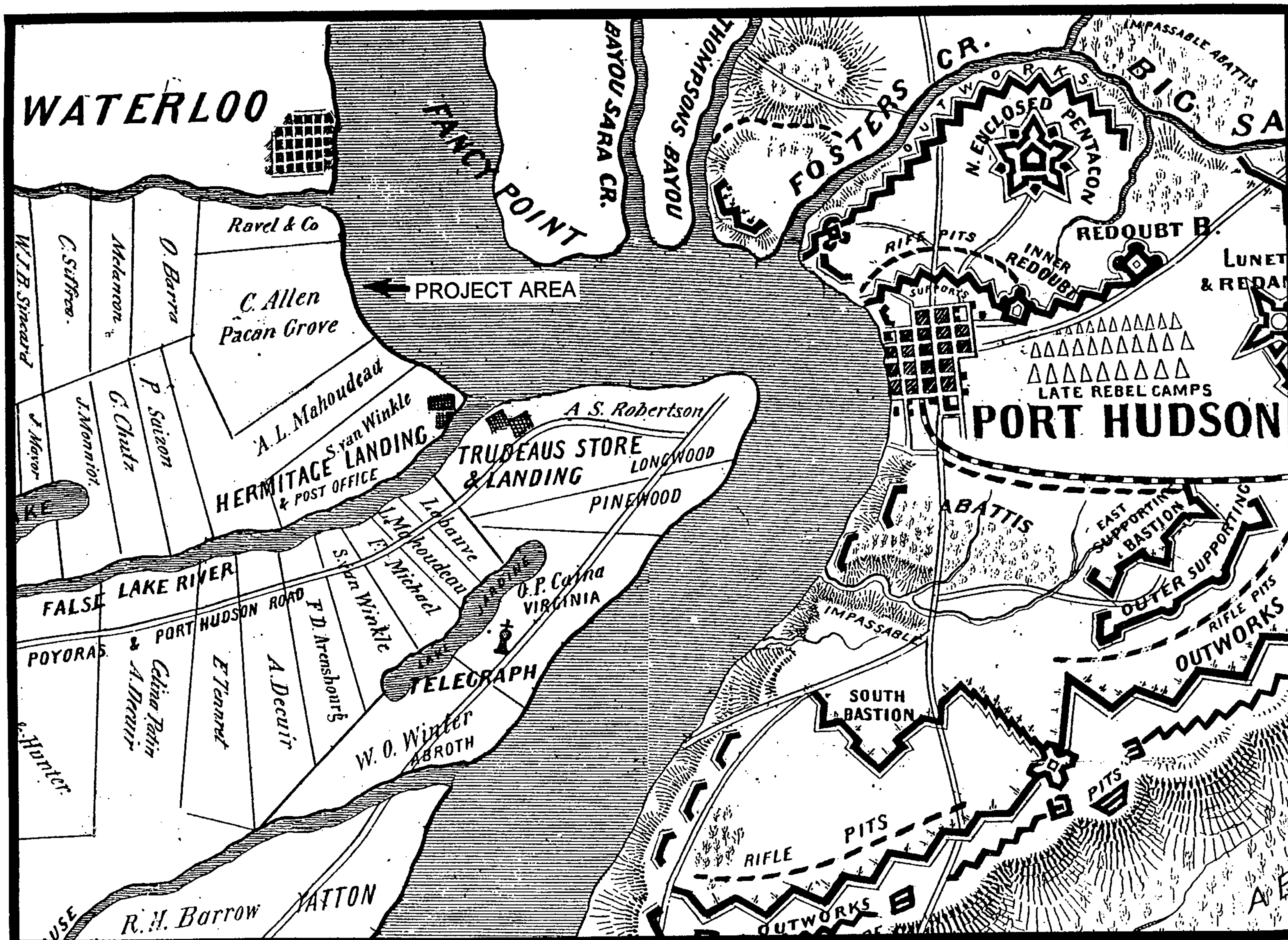


Figure 17. Excerpt from Tomlinson's *New Map of Port Hudson. Showing the Scene of Gen Banks Operations, Together with All of the Fortifications, Batteries, & c.* [sic throughout] [ca. 1863], depicting C. Allen's Pacan [Pecan] Grove Plantation, Waterloo, and Hermitage Landing.

known as Pecan Grove), and then rode to Cook's Landing, just above the Allen residence and plantation structures. Below the Upper Chenal False River dike and adjacent to the Mississippi River landing stood a store/warehouse belonging to Simon Hermann, or Herman (Edmonds 1983:198; FACC 1883-1884, No. 624; *OR* 1886:15:268). This shop, once part of Pecan Grove Plantation, was "built on one of the corners from the [Allen] plantation," from which it was "separated . . . only by a fence" (FACC 1883-1884, No. 624, Closing Brief for Claimant:7). Next to the Hermann store at Cook's Landing were an estimated 1,000 hhd of molasses and sugar, which Captain Magee ordered the local citizenry to roll into the Mississippi River. Frustrated at the lack of information gathered during the False River scout, Magee and his men returned to camp with "three of the enemy," apparently only one of whom actually was a Confederate soldier (Edmonds 1983:191-192, 198-200; FACC 1883, No. 197; *OR* 1886:15:268).

Through the end of the Civil War, military traffic continued across the False River country. First came the Federal troops, stationed from Morganza southward to the Winter plantation, who guarded against Confederate reinforcement of, or escape from, besieged Port Hudson. Later, the Union forces concerned themselves with chasing the elusive "irregular," or guerilla, forces reported to rendezvous at Waterloo and other False River locales (Edmonds 1984:127; *OR* 1886-1896; U.S. Secretary of the Navy [*ORN*] 1917:27:68-75). These "independent scouts" proved to be troublemakers for both armies, employing tactics considered "contrary to the usages of civilized war" (*OR* 1893:41[2]:593-594). Besides firing on passing steamers, they also shot at the Federal levee labor crews. On February 28, 1865, Confederate Captain W. B. Ratliffe sent citizen Alexander Barrow to negotiate the suspension of hostile regular operations, so that the Confederate authorities could "put a stop to these marauders:"

> I have given positive orders not to molest parties at work on levees, or to fire at the steam-boats, and my authority is from the Confederate authority in command of this district, and these orders have been distinctly promulgated. And in regard to the levees, it is not the desire of our generals to in the least obstruct a people in obtaining a support which the high water would deprive them of. Most of the persons along the line of the river are women and children, and dependent entirely upon the soil for support (*OR* 1896:48[1]:1085; *ORN* 1917:27:73).

Scavenging by troops and scouts, and damage to the levees during the Civil War, probably caused more harm to the False River populace than actual military activity through the region. Although no major engagements occurred within the project vicinity, the effects of wartime operations were devastating to the local economy. The generally dismal situation that many Pointe Coupee planters faced during postbellum years is reflected in the diminished sugar crop at Nina, as well as in the drastically reduced valuation of the plantation (Table 5; Figure 13)

Late Nineteenth Century - Early Twentieth Century Tenure

Samuel Hazard Snowden purchased Nina Plantation from Margaret Allen on February 2, 1882, for $29,000.00, with vendor's lien. At that time, the property was described as 1,080 arpents fronting the Mississippi River and bounded above by land formerly belonging to Ursin Sicard and Savinieu Pourciau, below by Paulin Deplaigne, and rear by Robert P. McClay. Excepted from this transaction was the 120 ft^2 lot facing the "Island of False River Road" that previously had been deeded by Margaret Allen to the "African Church" (located west of the project area in Section 15, between the road and False River). Included in the conveyance to Snowden were the plantation sugar house, engine, machinery, sugar mills, and fixtures, as well as cattle and other livestock. Although it was not mentioned in the act of sale, it should be noted that cotton, as well as sugar cane, was cultivated on Nina Plantation during the early 1880s, according to Mississippi River Commission [MRC] surveys of the region (Figures 14, 18, and 19) (COB 2:188, No. 12825, PCPCC; MRC 1882-1883a).

Snowden retained title to Nina Plantation until his death in 1888, after which the property was adjudicated at succession sale ($28,888.00) on December 22, 1888, to Solomon (of New York City), Victor, and Adolphe Meyer of V. & A. Meyer & Co. of New Orleans. Along with the real estate, Nina Plantation and a Cook's Landing

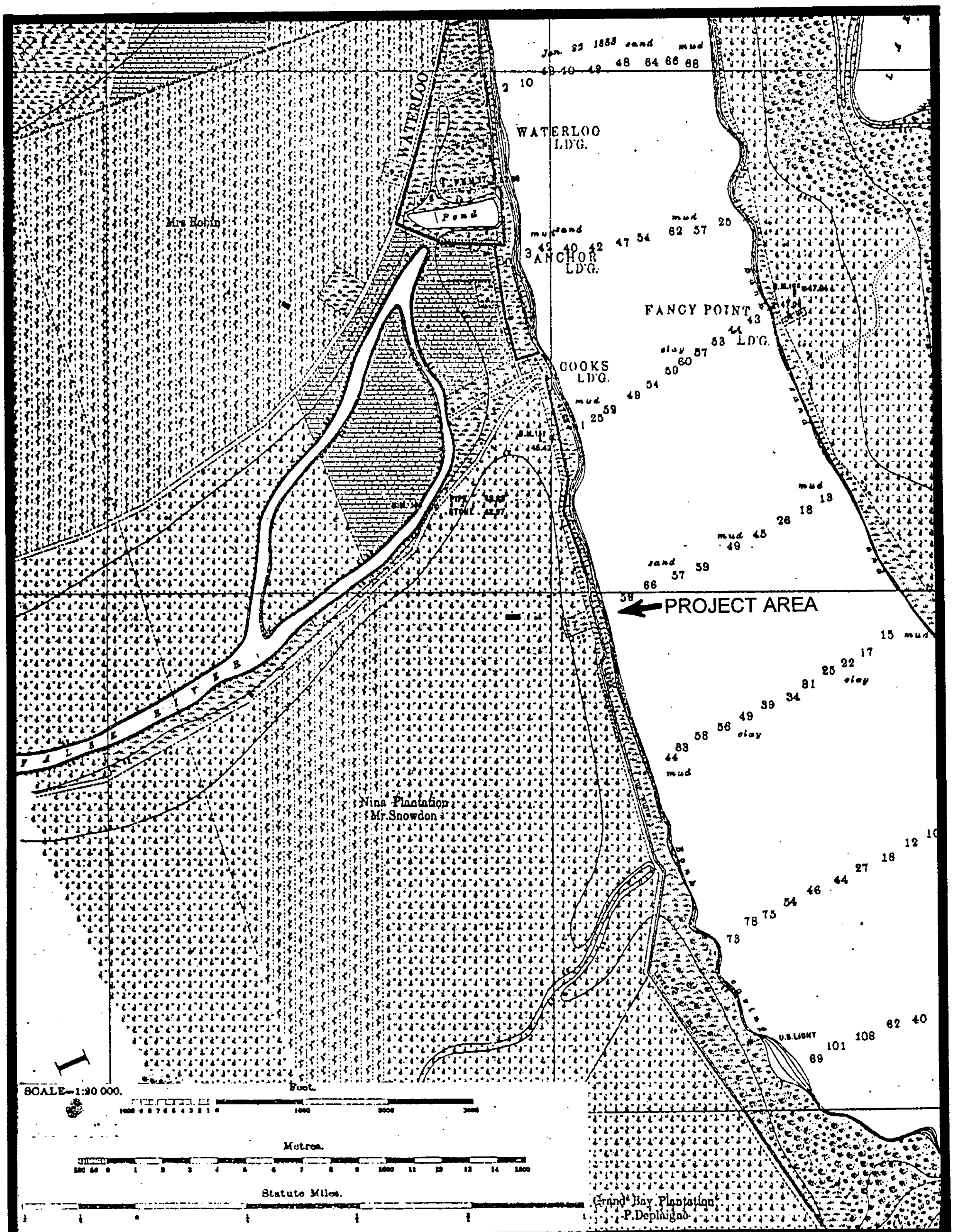


Figure 18. Excerpt from the Mississippi River Commission's *Survey of the Mississippi River*, Chart No. 64 [1880-1881], depicting Nina Plantation and Waterloo, Anchor, and Cook's landings.

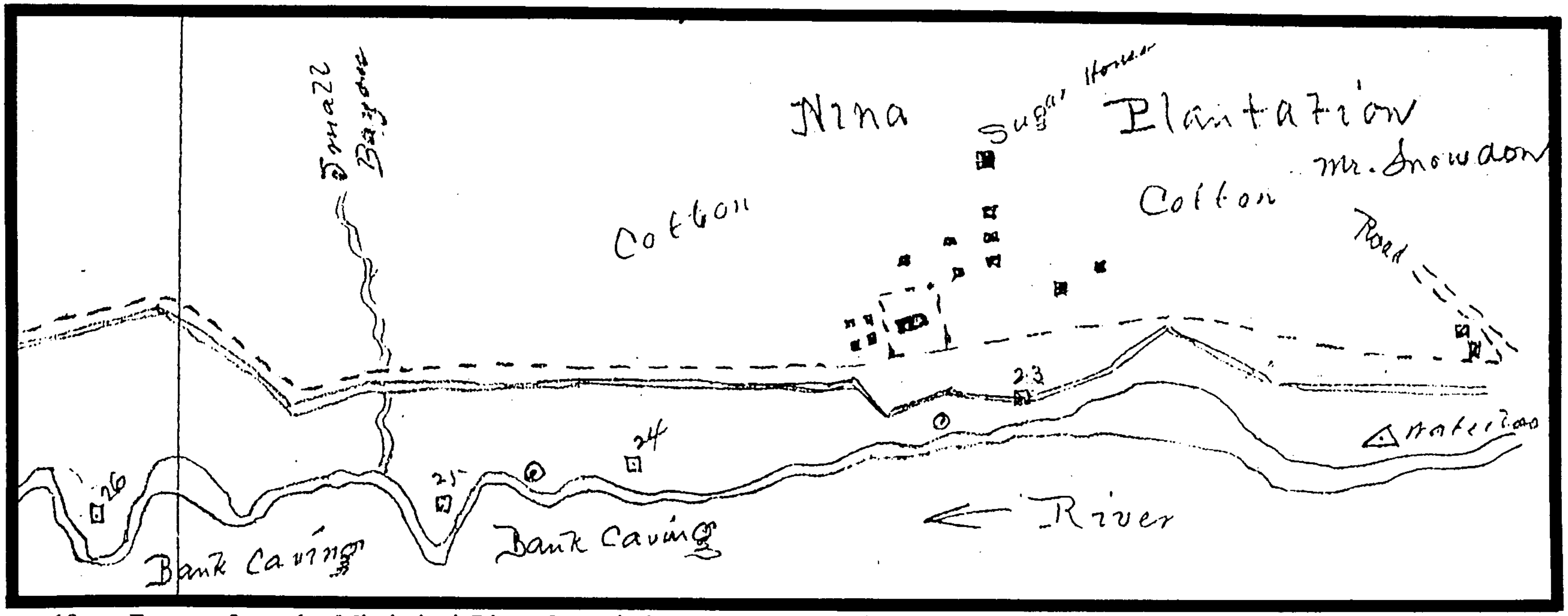


Figure 19. Excerpt from the Mississippi River Commission surveyor's notebook, *Topography near Waterloo, Hermitage, Point Manoir and Datum Point Clark*, Transit Book No. 999 [1882-1883], depicting the riverfront survey of Nina Plantation (MRC 1882-1883b).

lot fronting the north side of the Island Road, the Meyers also acquired the Nina sugar house, engine, machinery, sugar mill fixtures, dwelling, cabins, stables, and outhouses, as well as 29 mules, all work animals, hay, corn, fodder, wagons, carts, farming implements, mowing machine, and "all other things attached to said plantation." Excepted from the auction was "the present crop in preparation for market, and wood, coal and other materials needed to make and ship the crop" (Figures 14, 18, and 19) (COB 4:199, No. 15014, PCPCC; MRC 1882-1883b).

Less than two years after acquiring Nina Plantation, V. & A. Meyer & Co., sold the property on March 20, 1890, to the Farmers Land and Loan Company Limited (Jefferson Parish, Louisiana), through a "stocks and bonds exchange" worth $150,000.00. Nearly three years later, on January 12, 1893, Farmers Land and Loan, represented by vice-president Victor Meyer, sold Nina to Moses Schwartz of New Orleans for the considerably reduced sum of $17,500.00 (COB 5:43, No.15768; COB 6:114, No. 16663, PCPCC). These property value extremes undoubtedly represent some sort of corporate maneuver by the parties involved in the purchase (Figure 13). The Meyer business interests held Nina for only four years (December 1888 - January 1893), but it was under their management that the plantation sugar crop reached its peak. A seasonal breakdown of the Nina Plantation cane harvests from 1882 (post-Allen tenure) through the early twentieth century is outlined in Table 6.

In addition to the annual Bouchereau sugar reports, Nina Plantation figured prominently in the weekly Pointe Coupee letters published in *The*

Table 6. Sugar Production at Nina Plantation During the Late Nineteenth Century - Early Twentieth Century (Bouchereau 1882-1903).

CROP YEAR	PLANTER / OCCUPANT	SUGAR HOUSE	APPARATUS	SUGAR CROP (HHD/LBS)
1882-1883	S. H. Snowden	B & Sh	St & Ket	100 hhd
1883-1884	S. H. Snowden	B & Sh	St & Ket	70 hhd
1884-1885	S. H. Snowden	B & Sh	St & Ket	280 hhd (322,000 lbs)
1885-1886	S. H. Snowden	B & Sh	St & Ket	305 hhd (350,750 lbs)
1886-1887	S. H. Snowden	B & Sh	St & Ket	221 hhd (276,250 lbs)
1887-1888	S. H. Snowden	B & Sh	St & Ket	300 hhd (345,000 lbs)
1888-1889	Estate of S. H. Snowden	B & Sh	St & Ket	474 hhd (545,100 lbs)
1889-1890	Gen. Adolph Meyer	W M & Sh	S T O P (gran'd. at Cora Plant'n., Iberville Parish)	728 hhd (918,157 lbs, including 800 tons cane purchased from Ste. Claude Plantation)
1890-1891	C. J. Meyer	Wood	S T O P	1,004,000 lbs
1891-1892	C. J. Meyer	Wood	S T O P	—
1892-1893	Seckbach & Eiseman	Wood	S T O P	656,000 lbs
1893-1894	Point [Pointe] Coupee Planting and Manufacturing Co. Ltd.	Wood	S T O P & C	633,484 lbs
1894-1895	Point [Pointe] Coupee Planting and Manufacturing Co. Ltd.	Wood	S T O P & C	742,995 lbs
1895-1896	H. [A.] V. Robertson	—	—	448,500 lbs
1896-1897	H. [A.] V. Robertson	Wood	S T O P & C	700,000 lbs
1897-1898	Arthur V. Robertson	Wood	S T O P & C	—
1898-1899	Arthur V. Robertson	Wood	S T O P & C	—
1899-1900	Arthur V. Robertson	Wood	S T O P & C	—
1900-1901	F. O. Lieux	Wood	S T O P & C	—
1901-1902	F. O. Lieux	Wood	S T O P & C	—
1902-1903	A. [J.] V. Decuir	Wood	S T O P & C	—

B & Sh = Brick and shingle
W M & Sh = Wood, masonry, and shingle
St and Ket = Steam-power and kettle
S T O P = Steam tram, open pan
S T O P & C = Steam tram, open pan, and condenser

Louisiana Planter and Sugar Manufacturer. Following are several excerpts printed during the years of Meyer management:

> January 4, 1890 – One large double cabin on the Nina plantation caught fire on the 19th [of December 1889], and was reduced to ashes. Had it not been for the energetic efforts of those present, one or two other cabins, together with the sugar house, would also have been destroyed (*LPSM* 1890:4:6).
> December 13, 1890 – The mill on the Nina plantation is still in full blast, harvesting the cane on that place into syrup, from whence it is taken to the Cora place (also Messrs. V. & A. Meyer's), in Iberville parish, and there made into white sugar. The crop on this place is exceptionally large, and the average yield is equal to that obtained on the surrounding places. . .
>
> Mr. J. J. Trudeau . . . [of] Sweet Home plantation, on the island of False River, . . . has sold all his cane – except such quantity as will be required to plant his place next year – to Messrs. V. & A. Meyer of Nina plantation (*LPSM* 1890:5:452).
>
> March 21, 1891 – Gen. Adolph Meyer, president of the Farmers' Land and Loan Co., has written to our local paper, endeavoring to explain his reasons for taking out the injunction . . . but, as far as your correspondent can perceive, he has failed to place himself in a better light with our people, who, without exception, are unanimous in condemning him (*LPSM* 1891:6:209).
>
> August 8, 1891 – Nina plantation, just above Grand Bay, also sustained considerable [cane] loss by the new levee [being built so far from the river]. The cane on this place, like that on all the other sugar plantations of this parish, is magnificent (*LPSM* 1891:7:4).
>
> November 28, 1891 – The Nina mill is still in full blast. Only syrup is made at this place. This syrup is run through pipes into large tanks that are on board of a special tug boat in the river, and it is then taken down to the Cora plantation in Iberville parish, where it is turned into white sugar (*LPSM* 1891:7:300).
>
> January 14, 1893 – It is rumored that the Nina plantation, near Cook's landing, is soon to change hands (*LPSM* 1893:10:20).
>
> February 18, 1893 – The Nina sugar plantation has finally been sold by the Farmers' Land and Loan Company to Mr. Moses Schwartz, of New Orleans (*LPSM* 1893:10:102).

Interestingly, both publications reported such items as sugar granulation at the Cora Plantation in Iberville Parish and the processing of cane cultivated at neighboring plantations.

Only ten weeks following his purchase of Nina Plantation in January 1893 (filed February 8, 1893), Moses Schwartz sold the property to the Pointe Coupee Planting and Manufacturing Company Limited for $27,500.00, with a mortgage assumption. Along with the 1,080 arpents, the company purchased all appurtenances, including the sugar house, engine, machinery, sugar mills and fixtures, dwellings, cabins, stables, outbuildings, and farming implements. The earlier Schwartz acquisition had included a clause requiring him to honor a three-year property lease (through 1895) previously contracted with Seckbach and Eiseman; however, that agreement lasted only until March 28, 1893, when Schwartz sold the plantation to the Pointe Coupee Planting and Manufacturing Company, which was a Schwartz/Seckbach/Eiseman company (Table 6) (COB 6:114, No. 16663; COB 6:196, No. 16726, PCPCC).

The Pointe Coupee Planting and Manufacturing Company Limited was domiciled in Pointe Coupee Parish, but maintained an "office in New Orleans for the convenience of the meetings of the board of directors and for the purchase and sale of produce and necessary supplies" (*LPSM* 1893:10:212). Chartered in 1893, the original board of directors for the company consisted of Moses Schwartz, Adolphe Seckbach, Cassius M. Eiseman, John Overmeyer, and M. F. Flowers. Schwartz served as president, Seckbach was secretary-treasurer, and Eiseman acted both as vice-president and general manager (COB 6:196, No. 16726, PCPCC; *LPSM* 1893:10:212).

According to the Pointe Coupee letters reported in the *LPSM* of April 1893, the Pointe Coupee Planting and Manufacturing Company intended to construct a "central sugar factory" on Nina Plantation, not only for corporate use, but also for use by neighboring planters who wished either to purchase company stock or to sell their cane crops to the concern. By mid-November of 1893, the rumored central factory still had not been built at Nina; however, new sugar house

apparatus (steam tram, open pan, and condenser) was in place for the 1893-1894 crop season, and a large store managed by William Dalzell was in operation (Table 6) (*LPSM* 1893:10:212, 227, 244; 11:325). More than likely, the machinery was replaced after the sugar mill housing "gave away" that November, delaying the grinding process for several days (*LPSM* 1893:11:341).

Both sugar reports and news items of the day indicated that Nina Plantation thrived under corporate management. While leased to Seckbach and Eiseman, Nina produced a sugar crop of 656,000 lbs during the 1892-1893 harvest; two seasons later, the Pointe Coupee Planting and Manufacturing Company increased the yield to 742,995 lbs (Table 6). On April 1, 1893, the Pointe Coupee Parish letter to the *LPSM* reported that:

> One passing on the Nina front would hardly recognize the place. Since the plantation has changed hands a beautiful residence and storehouse have been built, and the negro quarters which were left out by the new levee have been placed on the land side. The sugar house and one or two small houses are still on the river side of the levee, but it is expected that these, too, will be soon removed. The place now has a fine appearance, and when all improvements will have been completed it will be among the finest of the parish (*LPSM* 1893:10:197).

During the following year, Nina Plantation and her operating company took the lead in local cane harvesting, according to the *LPSM* issue of September 22, 1894:

> It is reported that the cane cutting has already commenced on the Pointe Coupee Planting and Manufacturing Company's Nina plantation, and that grinding will begin on Monday next, the 24th. This, I believe, is the first start in Louisiana. It is also reported that until the 15th of next month, nothing but syrup will be made. The Nina mill is in good order and is one of the best equipped in the State (*LPSM* 1894:13:180).

Following the prosperous first years of the decade, disaster struck Nina Plantation during the winter of 1895. On January 19, 1895, the *LPSM* reported the destruction of the Nina sugar house:

> On last Tuesday night the large refinery on the Pointe Coupee Planting and Manufacturing Company's Nina plantation near Anchor, in this parish, was totally destroyed by fire. I am informed that there was [sic] only a few barrels of sugar in the sugar house at the time. The origin of the fire is not known. It is supposed to have been the result of incendiarism. The mill was only partially insured and the loss of the company is quite a heavy one. I have not heard whether another mill would be built on Nina or not (*LPSM* 1895:14:37).

According to the annual sugar and rice reports, the sugar house was not replaced or repaired until the 1896-1897 cane season (Table 6).

On April 1, 1895, the Pointe Coupee Planting and Manufacturing Company, represented by Cassius M. Eiseman, sold Nina Plantation for $15,000.00 (with mortgage assumption and vendor's lien) to Arthur V. Robertson of Pointe Coupee Parish. Robertson was general agent and manager of Nina prior to his purchase of the plantation (*LPSM* 1894:13:212, 1895:14:261). Included in the conveyance were the farming implements, 44 mules, 2 horses, "all cane or hay," and all plantation fixtures, as well as "the machinery wreck of the fire on said plantation" (COB 7:1:224, No. 17232, PCPCC).

Despite the loss of the Nina sugar house, Robertson continued cane cultivation on one-half of the property; the crop then was taken to Grand Bay Plantation for grinding. The balance of the Nina acreage was turned over to corn and cotton in 1895 (*LPSM* 1895:14:261). After the 1896-1897 season, no sugar crop was reported at Nina Plantation (Table 6). There had been foreshadowings of diminished cane cultivation prior to that time. In November 1894, it was noted that the entire Nina cane crop would be ground, with none reserved for planting, an indication "that the culture of cane will be entirely stopped on that plantation" (*LPSM* 1894:13:309). The April 27, 1895, issue of the *LPSM* further reported:

> . . . that the sugar mill, engine, bagasse burner, etc., of Nina plantation are advertised for sale. So it is decided that this . . . sugar place, one of the oldest in the parish, is to be transformed into a cotton place. This change will be sincerely felt by many small planters who cultivate cane to sell to the Nina mill (*LPSM* 1895:14:261).

Predictably, the decreased cane crop apparently affected the property valuation of Nina. The 1896-1897 season marked the last reported sugar crop for the plantation. Only a year earlier, Nina agent/manager Arthur V. Robertson purchased the property for a mere $15,000.00, plus other considerations. Furthermore, as denoted in the following paragraph, the fortunes of Nina Plantation declined under his continued management through the end of the century (Table 6; Figure 13) (COB 7:1:224, No. 17232, PCPCC).

During the last years of the nineteenth century, Arthur V. Robertson went into a leasing partnership with former Pointe Coupée Planting and Manufacturing Company officer C. M. Eiseman. Together, they contracted a planting lease (January 1, 1898) on downriver Grand Bay Plantation, as well as managing the cultivation of Robertson-owned Nina Plantation. Only two years after the lease was activated, the contract was canceled (February 1, 1900) by Grand Bay owner F. [François] Ovide Lieux; "Owing to the financial embarrassment of the planting partnership of Eiseman and Robertson and their inability to conduct and operate Nina and Grand Bay plantations" (COB 9:549, No. 19269, PCPCC). It is interesting to note that whatever problems Lieux had with Robertson's plantation management at the turn of the century, they apparently were resolved, because Lieux & Robertson later were listed as planters/manufacturers of Grand Bay Plantation from 1912-1917 (Bouchereau 1912-1917).

On March 3, 1900, Nina Plantation was adjudicated at sheriff's sale to F. Ovide Lieux for the sum of $12,556.00, with interest. For the first time in the public records, the property was described as 1,080 acres fronting the Mississippi River, rather than 1,080 arpents. At the turn of the century, the plantation inventory consisted of 28 mules, 6 wagons, plows and "farmers implements", 23 double cabins, 1 barn, 2 tool houses, 1 blacksmith shop, 1 store building, an estimated 6,000 bbl corn, 1 dwelling house, 1 assistant overseer house, and "about 175 acres of plant cane and 90 acres of stuble [sic]" (COB 9:567, No. 19301, PCPCC).

At the time of his Nina purchase, F. O. Lieux also owned neighboring Grand Bay Plantation, in which he had maintained an interest since around 1888 (Bouchereau 1888-1901). Besides his plantation concerns, Lieux (or a family member) ran a sawmill along the Mississippi riverfront between Anchor and Cook's landings ca. 1895. Although research did not indicate when Lieux began these lumber operations, area maps depicted a sawmill above Cook's Landing in 1882-1883 and ca. 1890, as well as a "wood yard" in the Nina vicinity as early as 1858 (Figure 7 and Figure 20) (MRC 1882-1883b; MRC 1895-1896).

F. Ovide Lieux retained title to Nina for four years before selling the plantation, with all structures, animals, and implements, to J. Vilneuve Decuir for $30,000.00 on March 8, 1904. Conveyance terms declared the previously executed lease (January 3, 1903) from Lieux to Decuir "null and void" (COB 14:244, No. 22765, PCPCC). As lessee of Nina, Decuir apparently had acted as manager for the property during the previous year, and was listed as "cane grower and sugar manufacturer" for both Nina and Grand Bay plantations during 1902-1903 (Bouchereau 1902-1903). An early twentieth century parish promotional publication noted that Decuir actually had managed Grand Bay Plantation for 18 years, most recently for F. O. Lieux. In 1906, the combined cultivated acreage of Grand Bay and Nina plantations totaled 1,000 acres, which by that time were planted entirely in cotton (Sanford 1906:30). Decuir held tenure to Nina until February 23, 1918, when the plantation was seized and adjudicated (for $21,000.00) to S. Gumbel & Co. Ltd. Of New Orleans, which corporation possessed title for just over a year (COB B:204, No. 1999; COB C:72, No. 3102, PCPCC).

Although Nina Plantation was listed (with sugar house and apparatus) on the yearly sugar and rice reports through the 1902-1903 season, no sugar crop was listed for the property from the 1897-1898 through 1902-1903 period. Nina Plantation disappeared from the annual reports after that time; however, Grand Bay Plantation continued to be listed through 1917. Once Nina's management began to focus on cotton, the diminished sugar crop probably was processed at the neighboring Grand Bay mill, which through the years often was operated by the same owner/manager as that of Nina Plantation (Table 6) (Bouchereau 1897-1917).

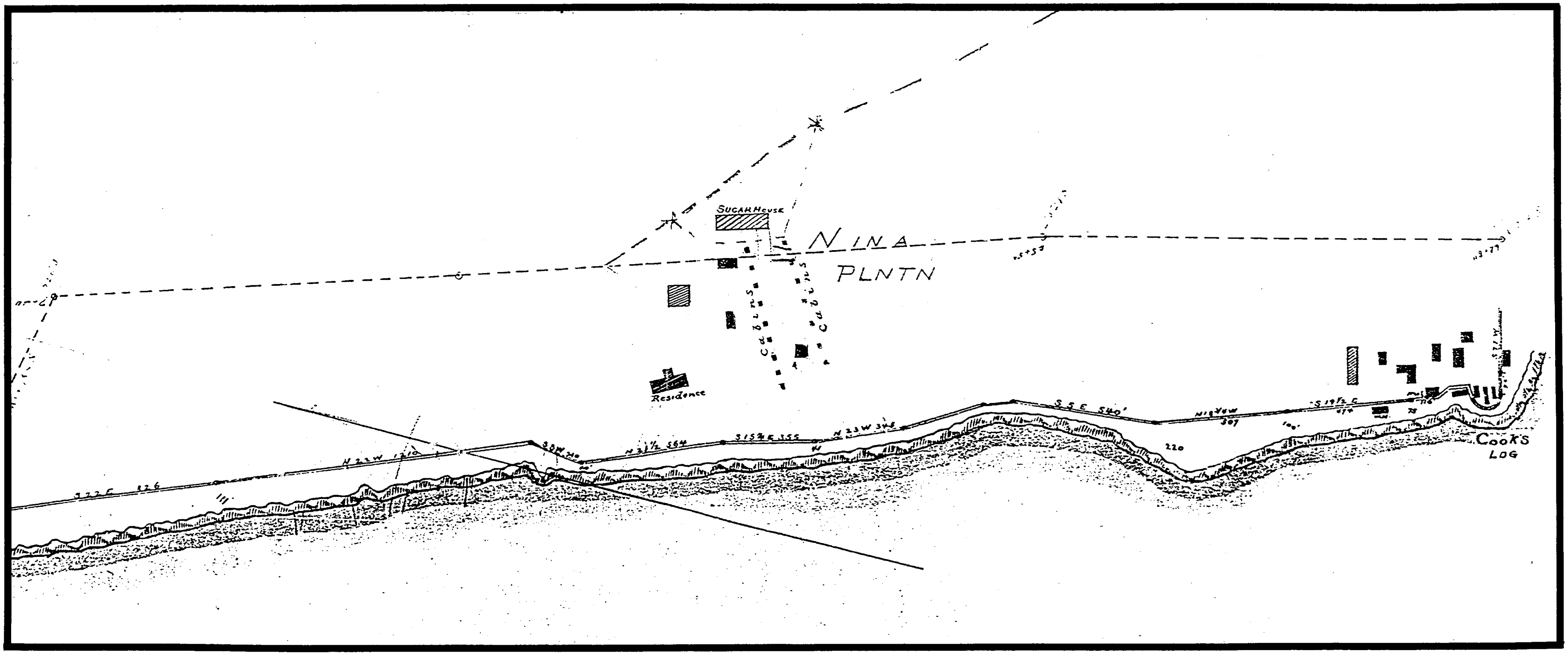


Figure 20. Excerpt from the Louisiana State Engineers' levee setback map [ca. 1890] depicting the proposed levee to be constructed behind Cook's Landing and through Nina Plantation. Please note that illegible notations and the words "NOT BUILT" appeared on the original copy of this map; however, the date(s), meaning, and relevance of this information could not be determined.

Flooding and Levee Construction at Nina Plantation

Nina Plantation, like so many other plantations in "the crevasse parish," struggled against the seasonal flooding of the Mississippi and False rivers. Critical floods in the region were recorded in the years 1851, 1858, 1867, 1882, 1884, and 1890 (Hinks 1995:5-7). Artificial levees had been constructed in Pointe Coupee Parish since at least 1865, "yet overflows . . . occurred annually, spreading ruin and disaster over much of our alluvial lands" (*LPSM* 1892:9:168). An account of the effects of the flood of 1851 stated that the plantation of Mrs. J.U. Jarreau (Pecan Grove/Nina) was "entirely overflowed." No sugar crop was produced until 2 years later in 1852-53 (Champomier 1852:5). The floods of 1858, 1867, and the 1880s, did not halt sugar production, although they may have caused minor inundation of portions of the plantation. Even the severe flood in 1884, which destroyed the nearby town of Waterloo (Riffel 1983:38), did not have as much of an adverse effect on the Nina Plantation crop as did the flood of 1851. *The Louisiana Planter and Sugar Manufacturer* faithfully reported area agricultural conditions, as well as the progress of levee construction to control inundation. Following are *LPSM* excerpts that chronicle the overflow situation and flood control measures in the Nina Plantation vicinity during the late nineteenth century. Please note that there are variant spellings of dike and Grand Bay Plantation.

> May 3, 1890 – We are now almost completely submerged; only the island and part of the upper and lower False river are out of water. All along the coast for a distance of twenty miles, and back to the banks of False river . . . is now but an immense waste of water. . .
>
> There are, as far as can be ascertained, twelve breaks in the levees of this parish, most of them large ones, and . . . little tillable land is not overflowed . . . . Many of our laborers have gone to East Baton Rouge and the Felicianas. . .
>
> The citizens of the Island and the Lower Chenal are working on the small dykes along the river ridge to prevent the back water from running into False river and overflowing them (*LPSM* 1890:4:453).
>
> May 17, 1890 – The crops on the island of False river, and a few other places not overflowed, are fine, but very grassy, not having been worked on account of the farmers being on the levees most of the time for the past month (*LPSM* 1890:4:357).
>
> July 5, 1890 – Assistant State Engineer A. Perillat has been drawing the lines of the new levees to be built in this parish (*LPSM* 1890:5[1]).
>
> December 13, 1890 – The new levee that is to be built in the neighborhood of Cook's Landing will be soon under way. . . If the proposed line is followed, this levee will pass directly behind the town of Cook's landing and run to the lower line of Nina plantation, leaving both that town and a large portion of the plantation, including the sugar house, residence, etc., behind the levee. The citizens of that neighborhood have had a meeting, and ask the state engineers . . . to strengthen the old levee instead of building a new one (*LPSM* 1890:5:452) (Figure 20 and Figure 21).
>
> June 13, 1891 – Complaints of disorderly and riotous conduct on the part of the laborers employed in the levee camps on Nina and Grande Baie plantations are numerous, but the reported lynching of three men on Grande Baie plantation, which appeared in the New Orleans dailies last week, is a fake, for nothing of that kind occurred. We are not that kind of people (*LPSM* 1891:6:441).
>
> June 20, 1891 – The levee being built in the neighborhood of Cook's Landing is progressing rapidly and has almost reached the sugar house on Nina plantation. This levee will greatly alter the appearance of "Nina," which was one of Pointe Coupee's prettiest sugar places.
>
> The hands working on this levee are in the habit of doing a great deal of shooting at night . . . . This is a nuisance that should be suppressed, and if the authorities are unequal to the task, the people of the neighborhood speak of doing it themselves (*LPSM* 1891:6:463).
>
> August 8, 1891 – Nina plantation, just above Grand Bay, also sustained considerable [cane] loss by the new levee [being built so far from the river] (*LPSM* 1891:7:4).
>
> August 29, 1891 –The new levee passing on the Nina plantation runs just behind the sugar house. This will be of great inconvenience when grinding begins, as over four-fifths of the cane on the place will have to be hauled over the levee. The cane on the river side of

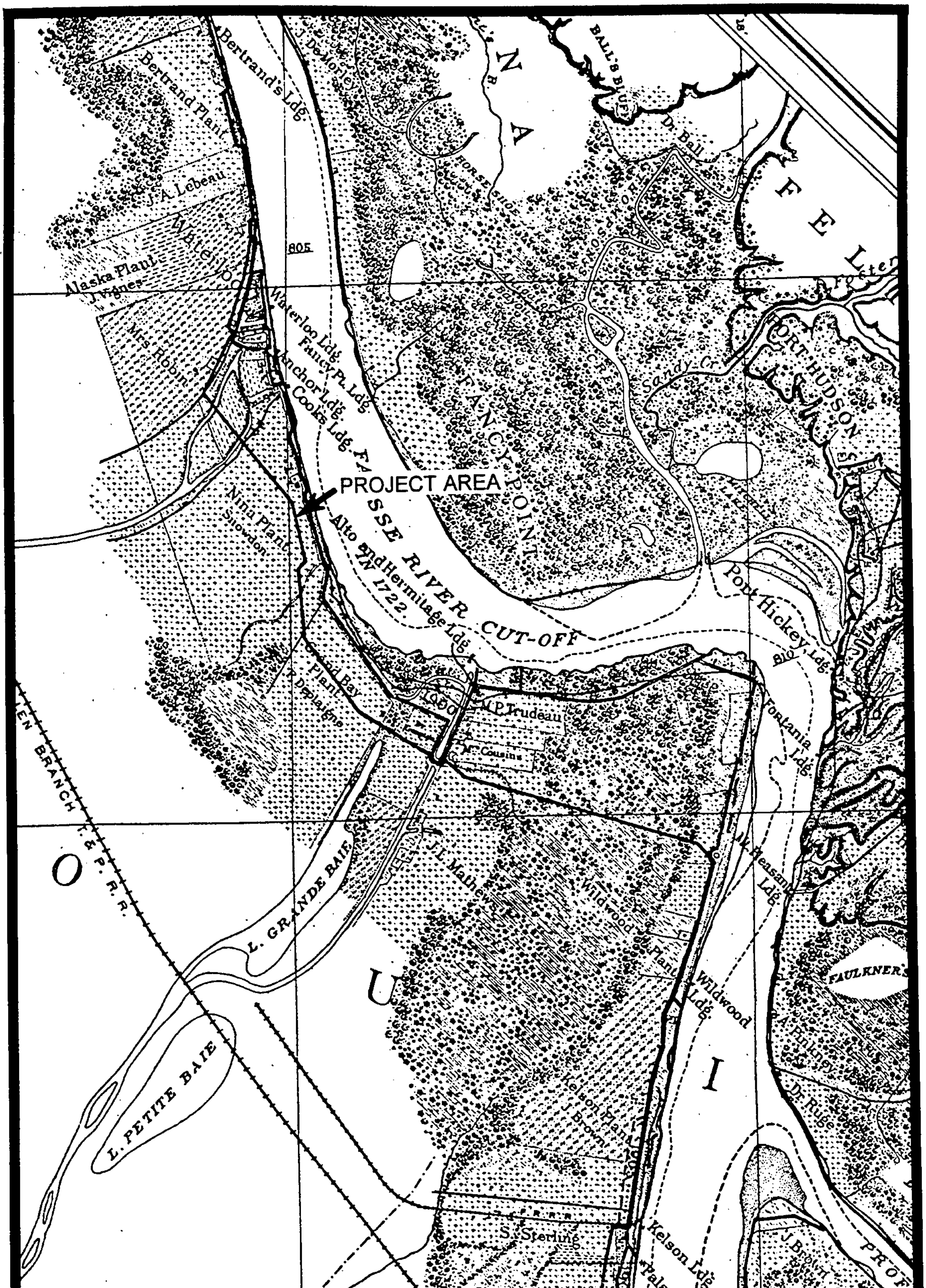


Figure 21. Excerpt from the Mississippi River Commission's *Map of the Lower Mississippi River from the Mouth of the Ohio River to the Head of the Passes*, Sheet No. 24 [1907], depicting Nina Plantation and Waterloo, Anchor, and Cook's landings.

the levee, though fine, has suffered considerably for want of drainage . . . . After the levee is completed and the house moved back, etc., one who knew this fine place as it was some years back, will hardly recognize it when he sees it again (*LPSM* 1891:7:63) (Figure 20 and Figure 21).

February 27, 1892 – The levee on Nina plantation – an important one – is being rushed to completion . . . (*LPSM* 1892:8:148).

March 19, 1892 – Our police jury met on Monday last, and made several appropriations for work on levees and roads – for the building of a road and dyke along the levee in front of the Nina and Grande Baie plantations . . . . These . . . works will greatly strengthen the levees they lay against (*LPSM* 1892:8:204).

January 14, 1893 – Pointe Coupee is tired of being called "the crevasse parish" (*LPSM* 1893:10:20).

April 1, 1893 – One passing on the Nina front would hardly recognize the place. . . . a beautiful residence and storehouse have been built, and the negro quarters which were left out by the new levee have been placed on the land side. The sugar house and one or two small houses are still on the river side of the levee, but it is expected that these, too, will be soon removed (*LPSM* 1893:10:197) (Figure 20 and Figure 21).

June 24, 1893 – Last Sunday night the protection levee around Anchor, and that part of the Nina plantation left behind the levee on the river side, gave away [sic] and submerged the town, and destroyed some very fine corn on Nina. The balance of the crop on Nina is in fine condition, only a little grassy. The cane, both plant and stubble, is beautiful and very promising (*LPSM* 1893:10:387).

July 22, 1893 – The small towns of Waterloo and Anchor are now out of water, also the mill on Nina, near Anchor. . . . . In the river the water is falling fast and has left from two to four feet of deposit along our banks (*LPSM* 1893:11:51).

November 18, 1893 – The mill at Nina is in full blast. . . . as soon as grinding is over on that place the mill, which is on the river side of the levee, will be taken down and rebuilt on the land side of the levee, and it is just probable that the talked-of central factory will be built . . . (*LPSM* 1893:11:325).

March 10, 1894 – Most of the residents of Anchor, who were forced to move on account of the high water that annually overflowed them, are building up a little town immediately back of the Nina plantation on the Island of False river (*LPSM* 1894:12:150).

May 19, 1894 – . . . all that portion of the Nina plantation that was left out by the levee . . . two years ago has been planted in corn this year. The river being below its bank . . . enables the owners to use this land, which would otherwise be useless. Therefore a larger crop of corn will be made this year on that plantation than ever before, as Mr. John Overmeyer, the manager, had planted a good crop of corn on the land side while the water . . . threatened to creep over its banks at Nina (*LPSM* 1894:12:302).

Construction of the new levee through Nina Plantation proved to be the demise of the former riverfront property. As noted in the preceding *LPSM* excerpts, flooding greatly affected the unprotected crops and structures between the old and new levees. Some plantation buildings were moved landside of the new construction, while others simply were demolished. With continued alluvial deposits and disuse of the land, the Nina batture eventually was transformed into an area of fallow agricultural fields and sparse woodland (Hinks 1995:5-7; R. Christopher Goodwin & Associates, Inc. 1994).

Glynn Family Tenure: 1919 – Present

On June 6, 1919, Alphonse J. Glynn of Arbroth (Glynnwood Plantation, south of the project area, along the Lower Chenal of False River) purchased Nina Plantation from S. Gumbel & Co. Ltd. For $35,000.00. Glynn was the son of Irishman Martin Glynn, who immigrated to New Orleans and worked as a wholesale grocer before moving his family to their False River sugar and cotton plantation ca. 1872. Besides Nina Plantation, the Glynn family also owned Glynnwood, McClay, and Elmwood plantations in Pointe Coupee Parish (COB C:72, No. 3102; COB D:300, No. 5675, PCPCC; Goodspeed 1975:447).

At the time of the Glynn acquisition, Nina Plantation was described as 814.73 acres (formerly 1,080 acres) fronting the Mississippi River – 617.98 acres in the "main tract," 33 acres in the tract north of the old channel, and 163.75 acres outside of the levee. Glynn also purchased a 30-acre tract (with houses and a cabin on-site) on the Upper Chenal at Cook's Landing, situated between Robin Plantation and Nina Plantation (Figure 22). In February 1922, Alphonse Glynn sold his Nina acreage (noted as 900 acres in this document), and the Cook's Landing property to the Glynn Planting Company, Limited, represented by secretary-treasurer Alexander A. Glynn (COB C:72, No. 3102; COB C:590, No. 4367; COB D:300, No. 5675, PCPCC).

On June 20, 1924, the Glynn company, represented by president Alphonse J. Glynn, sold 715 acres of Nina Plantation to Aloysius Lawrence Glynn for $40,000.00. The land was described as being located in Sections 15 and 16, T4S, R11E, and in Sections 91 and 92, T5S, R11E, with boundaries set north by the Upper Chenal of False River, south by C. W. Owens (Grand Bay Plantation), west by the McClay Plantation canal, and east by the public road along the Mississippi River. It is not clear from this delineation whether or not the batture was included in the transaction; in any case, the project area remained in the hands of the Glynn family. Nearly a decade later (February 2, 1935), Aloysius Glynn sold the same-described property, although reduced to 572 acres by that time, to Alexander A. Glynn for $12,000.00, with assumption of mortgage (COB E:251, No. 8071; COB I:585, No. 3260, PCPCC).

Alexander Glynn died only a short time after his acquisition of Nina Plantation. His Judgment of Possession was filed on August 9, 1935, leaving Nina to his widow, Felicie Supple Glynn, and four heirs. The plantation proper was described in the estate inventory as 530.82 acres, excepting the batture, highways, etc. The Nina batture was defined as comprising all of Sections 16, 17, 90, and 91, T4S and T5S, R11E, lying east of the "new levee" and northwest of Grand Bay Plantation (COB J:134, No. 466, PCPCC).

On April 10, 1946, Richard S. Glynn purchased all remaining interests in Nina Plantation from the widow and other heirs of Alexander A. Glynn. Richard Glynn, who was married to Lucille Price, also acquired neighboring Grand Bay Plantation. After Lucille P. Glynn died in 1986, her community interest in Nina and Grand Bay was divided between her husband and daughter. Her only child, Catherine "Kacoo" Glynn Olinde (wife of James Ralph Olinde), inherited Nina and Grand Bay plantations from her father upon his death in 1989, and Mrs. Olinde holds title to the present day property. When the Richard Glynn Judgment of Possession was filed on July 17, 1990, the boundaries of Nina remained much as they had existed through most of the twentieth century. Except for a few small conveyed tracts, Nina Plantation retains the same configuration today, surrounded by the Mississippi River, Grand Bay and McClay plantations, and the Upper Chenal of False River (COB Y:166, No. 360; COB 313:84, No. 22; COB 341:419, No. 121; COB 348:493, No. 110, PCPCC; Tax Assessment Roll 1994, PCPCC; Tobin ca. 1950s).

Summary

The Nina Plantation project area has remained part of an agricultural region from its earliest tenure to the present. The original plantation structures that form the nucleus of this investigation probably were built during the first quarter of the nineteenth century under ownership of the Jarreau family. Following construction of the "new levee" during the late nineteenth century, the plantation inhabitants were forced to move, and above-ground traces of these nineteenth-century buildings gradually disappeared, first under cultivated fields, then beneath alluvium and overgrowth. As many as 100 people were engaged in both domestic and agricultural activities at Nina Plantation. The abundant archeological evidence accumulated about these people is described in the remainder of this report.

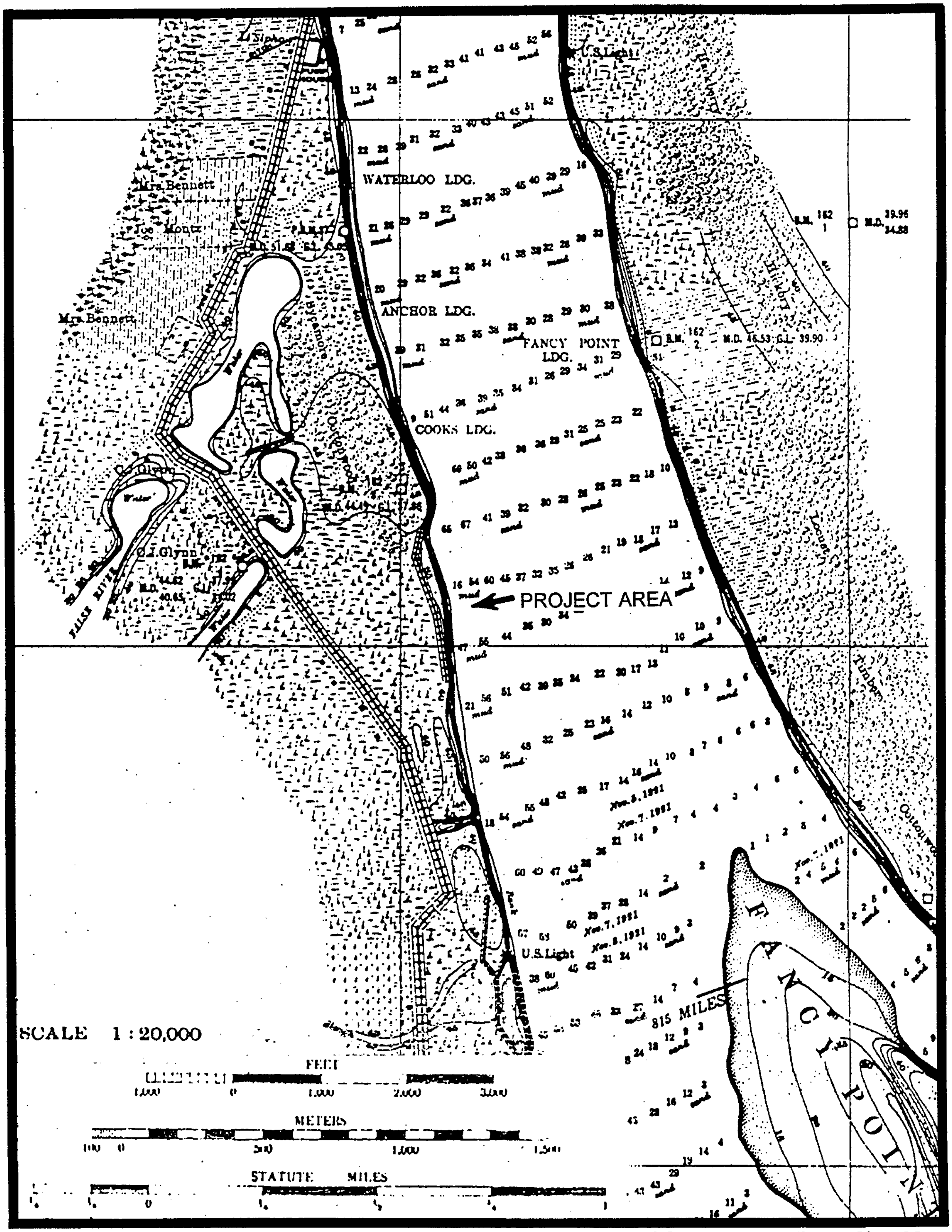


Figure 22. Excerpt from the Mississippi River Commission's *Survey of the Mississippi River*, Chart No. 64 [1921], depicting the Glynn property [Nina Plantation] and Waterloo, Anchor, and Cook's landings.

CHAPTER V

THE ARCHEOLOGICAL CONTEXT

Previous Investigations

Interpretation of the results of archeological data recovery at Nina Plantation (Site 16PC62), must include an awareness of other local, or related, cultural resources investigations. Knowledge of the results of these previous studies provides both comparative and contextual information. This review of the archeological context of Nina Plantation includes a summary of the results of previous Phase II investigations at Nina Plantation (Yakubik et al. 1994), and a discussion of previous cultural resources investigations that have been conducted in the vicinity. Finally, studies at comparable plantation sites in Louisiana are reviewed.

NRHP Phase II Excavations at Nina Plantation

The archeological site at Nina Plantation (16PC62) first was identified and recorded in 1992, during a cultural resources survey conducted by Earth Search, Inc., for the U.S. Army Corps of Engineers, New Orleans District. As a result of analysis of historic cartographic information, the site was identified as Nina Plantation. Bankline survey resulted in the identification of five concentrations of historic debris, with manufacture dates that spanned the nineteenth century. In addition, intensive survey in the area of the former sugar house revealed brick foundations that had been impacted by the removal of fill for levee construction. Because of the presence of intact cultural features, the site was judged capable of producing data important to understanding of both regional and state history. The site was assessed as potentially eligible for inclusion on the National Register of Historic Places, and test excavations to ascertain National Register eligibility, subsequently were conducted at the site (Yakubik et al. 1994:373).

Testing was conducted in both the "great house and quarters complexes," and in the "industrial complex," where the sugar house was thought to have been located. The sugar house is not included in the current project area, since it is positioned more than 33 m (100 ft) from the bankline of the Mississippi River (Scope of Work). Testing in the domestic area of Site 16PC62 consisted of the excavation of 11 backhoe trenches. These trenches ranged from 3 to 33 m (9.8 to 108.3 ft) in length; they were spaced approximately 50 m (164 ft) apart, and they were oriented perpendicular to the Mississippi River bankline. In addition, one trench was excavated parallel to the river. Trench depth varied but averaged 160 cmbs (63 inbs). A representative stratigraphic profile included an approximately 100 cm (39.4 in) layer of twentieth century alluvium, capping a culture-bearing stratum averaging approximately 20 cm (7.9 in) in thickness. Only one cultural stratum was noted during the Phase II investigations, although Yakubik stated that cultural materials within this stratum appeared to be stratified chronologically (Yakubik et al. 1994:374).

Cultural materials were recovered from all trenches except Trenches 5 and 6. The highest densities of recovered artifacts were noted in Trenches 8 and 10, i.e., those trenches associated with the main house and detached kitchen, and in Trench 2, the area associated with the slave quarters of the plantation (Yakubik et al. 1994:384-388). These results coincided both with

bankline survey results and with the overall artifact distributions subsequently identified during data recovery trench and unit excavation.

During test excavations at Site 16PC62, 12 features were identified; 10 of these (Features 3 - 11a-b) were positioned within the domestic portion of the site (Yakubik et al. 1994:384). Features 3 - 8 were located in Trench 2, which cut through the slave quarters area of the plantation, and they were outside both the impact area and the current project area. Features 9, 10, 11a, and 11b were located in Trenches 8 and 10, both within the current project area, and situated within the main house/outbuilding complex.

Features 9 and 10 were identified in Trench 8, which ran through Block C of the current project area. These features were described as a "massive brick stepped footing" (Feature 9), and an associated lens of charcoal (Feature 10). Based on available cartographic evidence, and on the high artifact density associated with Trench 8, it appeared that Feature 9 represented a footing for the "great house" (Yakubik et al. 1994:413). Phase III investigations, however, have shown that Feature 9 was in fact the foundation of a central brick chimney associated with the detached kitchen at Nina Plantation (Feature 116). This feature will be described and discussed in detail in Chapter VIII.

Features 11a and 11b were located in Trench 10, and were characterized as concentrations of brick and mortar (Feature 11a), and as a "floor" of crushed brick (Feature 11b) located directly east of the brick and mortar concentration. A high density of pane glass and nails recovered from this trench suggested a structural association for the feature, while the presence of cast iron stove fragments suggested that the associated structure represented a kitchen dependency for the main house (Yakubik et al. 1994:422). The current Phase III excavations were able to demonstrate that these features were associated with the main house, and not with a kitchen outbuilding. The main house structure will be discussed in depth in Chapters VIII and IX.

Trench 2, excavated In the vicinity of the slave quarters, contained six recorded features. These were identified as a concentration of charcoal, cinder, coal, and slag (Feature 3); concentrations of brick and mortar (Features 4 and 6); two brick piers (Feature 5); the remnants of a wall footing (Feature 7); and a trash pit (Feature 8). It is clear from the historical cartographic evidence examined as a part of the Phase III archival research, that the features located in Trench 2 during the Phase II excavation were associated with the slave quarters of Nina Plantation. High concentrations of ceramics, glass, metal, and faunal materials also were recovered during excavation in this area. In Chapter IX of this report, these subassemblages will be compared with the artifacts recovered during data recovery at the main house and in the outbuilding complex.

Based on the results of the 1992 National Register testing at Nina Plantation, the site was assessed as eligible for inclusion in the National Register of Historic Places, and data recovery of Site 16PC62 was recommended (Yakubik et al. 1994:453-454). The final report, which documented the results of testing at 16PC62, offered a number of potential research questions, as well as suggested data recovery methods (Yakubik et al. 1994:454-461). These questions were considered as part of the data recovery program conducted by R. Christopher Goodwin & Associates, Inc.; a more complete discussion of these issues is found below, in Chapter VI of this report.

<u>Previous Cultural Resources Surveys in the Vicinity of Site 16PC62</u>

For the purposes of this report, the vicinity of Site 16PC62 has been defined as the west (right descending) bank of the Mississippi River, between Pointe Coupee (River Mile 265) and Point Menoir (River Mile 255). In addition, surveys conducted within a distance of 3.2 km (2 mi) inland from the Mississippi River also are included in this summary. The majority of cultural resources surveys and assessments identified in the vicinity of Site 16PC62 have focused on the bankline and batture areas of the Mississippi River, and have been stimulated by levee revetment and construction work planned and carried out by the U.S. Army Corps of Engineers. Another survey associated with the planned construction of an oil pipeline by Colonial Pipeline Company also resulted in an extensive examination of the region.

The first survey and assessment completed in the vicinity of the current project area was conducted in 1976 by Coastal Environments, Inc. That survey, conducted in anticipation of the con-

struction of a 40 inch O.D. Colonial Pipeline Company products line, extended from East Feliciana Parish, Louisiana, to Orange County, Texas (Gagliano et al. 1976). Waterloo (Site 16PC31), Fancy Point, and Cook's Landing, all were recorded as a result of that survey. As noted above, Waterloo was an historic river town that dated from 1840 to 1910; both Fancy Point and Cook's Landing were associated with Waterloo. At the time of survey, the Waterloo portion of the site had been impacted by previous levee construction, and Fancy Point Landing had been impacted by an oil pipeline constructed during the 1960s (Gagliano et al. 1976:62). Testing at the site of Cook's Landing consisted of the excavation of a series of backhoe trenches oriented perpendicular to the portion of the proposed pipeline; of the five trenches excavated, only one contained cultural materials (Gagliano et al. 1976:67-70). No features were encountered in the trenches, but subsequent bankline survey of the site produced evidence of brick piers and a brick foundation, as well as additional nineteenth century cultural material. The depth of the cultural deposits was estimated at between 1.5 to 1.8 m (4.9 to 5.9 ft), and Gagliano et al. (1976: 96-97) noted that this significant cultural resource represented an intact example of a nineteenth century Mississippi River town and landing. They also suggested steps to mitigate impacts to the site from the proposed pipeline construction, and subsequently five 1 x 1 m (3.3 x 3.3 ft) units were excavated at Cook's Landing by Castille and Morgan (n.d.). Extensive deposits of nineteenth century materials, interpreted as the remains of warehouses, were identified within 20 m (66 ft) of the bankline (cf., Gagliano et al. 1978:1, 18).

In 1978, Coastal Environments, Inc. revisited the vicinity of Site 16PC31 to conduct a cultural resources assessment of the site of a proposed borrow pit area located approximately 0.5 km (0.3 mi) west of the 16PC31 site area (Gagliano et al. 1978). Fieldwork included the excavation of 11 trenches, but cultural material only was recovered from two of those trenches. This material included brick, a single non-diagnostic ceramic sherd, a single piece of non-diagnostic glass, an iron spike, and various iron fragments. No midden deposits or evidence of cultural features were noted, and it was determined that there would be no adverse impact as a result of borrow pit excavation (Gagliano et al. 1978:22, 25, 27).

A cultural resources survey of the proposed Pointe Coupee to Arbroth levee enlargement project area was conducted in 1983 by Stuart and Greene of the National Park Service. That survey extended from M-270 to 249.5-R, and included the entire bankline and batture area between Pointe Coupee and Point Menoir (Stuart and Greene 1983), and incorporating the not yet recorded site, 16PC62 (Nina Plantation). In 16 areas scheduled for impact, "100 percent" pedestrian reconnaissance was conducted along linear transects spaced varying widths apart. In the remainder of the project area, an estimated 25 percent of the area was surveyed. No subsurface testing was conducted in conjunction with this project (Stuart and Greene 1983:8). While the previously recorded sites 16PC31 and 16PC33 were noted, no new cultural resources were recorded (Stuart and Greene 1983:9).

In 1992, Earth Search, Inc. (Yakubik et al. 1994) conducted an extensive survey of a number of Mississippi River levee and revetment project areas scattered between River Miles 270.2 and 246.0-R. Survey included an assessment of the planned Grand Bay Revetment Item, i.e., the batture area between River Miles 259.5 and 255.0-R; the Arbroth Revetment Item, located on the batture between River Miles 251.4 and 246.0-R; and Pointe Coupee to Arbroth Seepage Control Project, which included scattered areas both within the batture and landside of the levee between River Miles 266.0 and 249.4-R. Fieldwork resulted in the recordation of eight sites within the various revetment items. Of these, Site 16PC62, Nina Plantation, located in the Grand Bay Revetment area, was the only site assessed as potentially eligible for inclusion in the National Register of Historic Places. Other historic sites recorded during batture survey included 16PC56, a scatter of late nineteenth-early twentieth century structural and domestic debris; 16PC57, a series of exposed early nineteenth century artifact concentrations positioned along the top of and river side of an abandoned levee; 16PC58, a deposit of slag, coal, iron, and structural materials scattered along the bankline; 16PC59, a scatter of coal, brick, iron, glass, and nineteenth century ceramics found eroding from the bankline; 16PC60, a low

density scatter of mid to late nineteenth century domestic artifacts also found eroding from the bankline; and 16PC61, a light scatter of nineteenth century domestic material. Each of these sites, with the exception of 16PC61, was located in the vicinity of the Pointe Coupee Ferry, i.e., just upriver from the defined vicinity of Site 16PC62. Site 16PC61 is located east of the inferior Chenal of False River, or approximately 4.0 km (2.5 mi) downriver from Site 16PC62 (Nina Plantation). Subsequent Phase II testing at Nina Plantation (Yakubik et al. 1994) was discussed previously, and the archeological results of that effort are reviewed in more detail in subsequent chapters of this report.

Plantation Sites in Louisiana

While no comparable plantation sites have been identified in the immediate vicinity of Site 16PC62, a number of archeological investigations have been conducted on eighteenth and nineteenth century plantations in other areas of the state. Because of their comparative value in researching a site such as Nina Plantation, these sites will be introduced briefly in this section; detailed comparisons are drawn to the results and conclusions of those efforts in Chapters VIII, IX, and X, below.

Rosehill Plantation (16WBR12)

Located just downriver from Profit Island, at Solitude Point, Rosehill Plantation (16WBR12) first was recorded in 1984 by the National Park Service (Shafer et al.1984). This reconnaissance survey, conducted under contract to the U.S. Army Corps of Engineers, New Orleans District, resulted in the identification of both brick foundation remains and domestic artifacts eroding from the river bank. In 1992, the site was revisited by Earth Search, Inc., and test excavations were conducted to assess the significance of the site applying the National Register of Historic Places criteria for evaluation (Yakubik et al. 1994). A total of seven backhoe trenches were excavated throughout the site areas, and they produced the extensive remains of the plantation sugar house, as well as evidence of a small domestic component. Data recovery to examine and record the sugar house portion of the site was recommended (Yakubik et al. 1994:496-497).

More recently, several deeply buried cultural features that had not been identified previously were discovered during construction of the Arbroth Revetment. These features were investigated by Coastal Environments, Inc. (Hahn 1994). While subsumed within the larger boundaries of Rosehill Plantation, these features were not part of the plantation, per se, but rather they were associated with a small free black community that had developed on the land of Theophile Mahier, a free person of color. Site 16WBR40 consisted of a group of brick foundations that probably were associated with a small sugar mill operated by Mahier, while Site 16WBR41 was a cemetery associated with the black community, which probably was in use between 1877 and 1930 (Hahn 1994:57). The features investigated by Coastal Environments, Inc., subsequently were destroyed during construction; no recommendations were made for any remaining portions of these sites (Hahn 1994:59).

Elmwood Plantation (16JE138)

This site, located in East Jefferson Parish, within the metropolitan New Orleans area, was investigated by R. Christopher Goodwin & Associates, Inc., in 1984; the project was funded jointly by the U.S. Department of the Interior, by Elmwood Plantation, Inc., and by the Jefferson Historical Society of Louisiana. Originally part of the Ste. Reyne concession, which was granted shortly after the founding of New Orleans, Elmwood remained a productive sugar and rice plantation through the end of the nineteenth century. Testing at Elmwood Plantation incorporated both archeological excavation and the use of a magnetometer to identify the location of a number of subsurface features. Although it had burned in the 1960s, the ruins of the Great House built by Norbert Fortier still stood. Excavations at Elmwood succeeded in locating the remains of the detached kitchen associated with the house, and they were able to provide data regarding the architecture and use of the Great House and kitchen (Goodwin et al. 1984). While the occupational span identified during excavations is somewhat earlier than that noted for Nina Plantation, the architectural details, the ceramic sequence, and the faunal data derived from these excavations have proved invaluable for compara-

tive purposes. The investigations concluded that Elmwood Plantation, because of its potential to provide data important to an understanding of local, regional, and national history, was eligible for nomination to and inclusion in the National Register of Historic Places. In addition, the authors recommended that steps be taken to preserve and protect the site (Goodwin et al. 1984:259).

Ashland-Belle Helene Plantation (16AN26)

Data recovery efforts at Ashland-Belle Helene Plantation, located near Gonzales in Ascension Parish, were conducted by Earth Search, Inc. in 1992, under a Memorandum of Agreement between the Environmental Protection Agency, the Louisiana State Historic Preservation Officer, the Advisory Council on Historic Preservation, and by Shell Chemical Company. Excavations were funded by Shell Chemical Company, and while the Great House and yard of this nineteenth century sugar and cotton plantation already were listed on the National Register, the planned development of the remaining 68 ac (27.5 ha) parcel would have adversely affected the area of the slave quarters and the sugar mill. Extensive data recovery efforts in the area of the slave quarters provided valuable architectural data, and further allowed characterization of the material culture and diet of the occupants of these nineteenth century quarters (Yakubik et al. 1994). In Chapters IX of this report, a number of detailed comparisons are made between ceramic and faunal data recovered from the Ashland-Belle Helene Plantation, and data collected from Nina Plantation.

Oakley Plantation (16WF34)

Oakley Plantation is located within the Audubon State Commemorative Area, near St. Francisville, Louisiana. Its life as a cotton plantation spanned the nineteenth century, and even after its demise as a productive enterprise, tenants continued to occupy Oakley until 1949 (Wilkie and Farnsworth 1992:2). In 1980, 1984, 1985, 1989, and 1990, cultural resources surveys were conducted in portions of Oakley Plantation (Woodiel 1980, 1985; Holland and Orser 1984; Castille 1989, 1990). Subsequent to these intensive surveys (1991), more extensive testing for National Register eligibility was conducted by Wilkie and Farnsworth of the Department of Geography and Anthropology at Louisiana State University, in Baton Rouge. Fieldwork consisted of unit excavation, shovel testing, magnetometer survey, mechanical post-hole excavation, surface collection, and the gathering of oral histories. While many of the areas tested revealed a level of disturbance sufficient to deny inclusion on the National Register of Historic Places, other areas displayed evidence of features that possessed both research potential and integrity (Wilkie and Farnsworth 1992:3). While no data recovery efforts have been undertaken at Oakley Plantation, the results of testing for National Register eligibility have provided artifactual and faunal data from what is believed to have been the residence of the Freeman family, who were employed as domestic servants at the plantation. While the Freemans were occupants of the identified structure during the latter part of the nineteenth century, material recovered from the structure suggests an occupation spanning the entire nineteenth century (Wilkie and Farnsworth 1992:193).

In addition to these plantation studies, limited work has been conducted at a number of other plantation sites along the river. In 1982, limited testing for National Register eligibility was conducted by R. Christopher Goodwin & Associates, Inc., at Magnolia Plantation (16PL94). The area tested, however, did not contain significant features or cultural remains related to the occupation of Magnolia Plantation (Goodwin and Yakubik 1982:111). Lakeland Plantation (16PC33), lies approximately 8 km (5 mi) upriver from Nina Plantation. Testing at this site was limited, and failed to identify any features associated with this nineteenth century sugar and cotton plantation (Hinks et al. 1983). Limited archeological investigations were conducted in 1993 at Destrehan Plantation (16SC18) (Yakubik et al. 1993), but did not contribute data useful for comparative purposes. Finally, cultural resources investigations were conducted in 1992 at Beka Plantation (16OR90), by Earth Search, Inc. (Yakubik and Franks 1992). While only one 1 x 1 m (3.3 x 3.3 ft) unit was excavated, the recovered data provided information on ceramics and faunal remains that can help to elucidate

nineteenth century Louisiana plantation trade, consumption, and dietary patterns.

Plantation Sites in the Southeastern United States

While the most concise archeological comparisons can be made with data derived from plantation studies within Louisiana, placing the current project within the wider context of the antebellum Deep South allows more accurate discrimination of local patterns of change. For example, studies conducted in coastal and lowland Georgia (Otto 1984; Adams and Boling 1989), Florida (Fairbanks 1974), Texas (Gross et al. 1990), and South Carolina (Wheaton and Garrow 1985), have provided data essential for the interpretation of broader patterns of trade, social and labor relations, ethnic identity, plantation layout, and architecture. The theoretical and methodological aspects of these and other regional investigations into plantation society are discussed in Chapter VI, while specific archeological comparisons are addressed in Chapters IX and X of this report.

CHAPTER VI

RESEARCH DESIGN

Introduction

The Scope of Work (Appendix IX) for archeological data recovery at Nina Plantation (16PC62) defined three major research objectives. The first was examination of the material culture of planter and slaves/freedmen on a sugar and cotton plantation. The second issue was a comparison between dietary patterns identified for planter and slaves/freedmen. The final research issue specified in the Scope of Work was examination of the layout of buildings at Nina Plantation. Each of these themes was derived from prior research within Louisiana and within the broader universe of Southern agricultural sites; all were approached from the framework of past plantation studies.

The archeological investigation of plantations has developed from particularistic studies of architectural remains, first carried out in the 1930s (Cate 1930:34; Ford 1937) for purposes of reconstruction, to complex anthropological examinations of the plantation as social, cultural, economic, and political units (Orser 1988a, 1988b, 1988c; Epperson 1987, 1990; Kelso 1984; Otto 1984). Charles Fairbanks, in his work at Kingsley Plantation in Florida (Fairbanks 1974), was one of the first to employ this more holistic approach. For perhaps the first time, the emphasis of plantation investigation was placed on slavery and African Americans, rather than on slave owners. This signaled the beginning of the consideration of the plantation as a milieu of complex and interdependent relationships, and almost a microcosm of Southern society (Otto 1984). It was the beginning of a recognition that "slaves and other agricultural laborers [were] essential components to understanding plantation life" (Singleton 1990:71).

Within this broad framework, theoretical approaches to the plantation system have varied considerably. The great majority of plantation studies have concentrated on the reconstruction of everyday life, with attention to examinations of facets of material life such as housing and diet. Efforts also have been made to define and to interpret the relationship of class, status, and race within plantation society. Recent works by Orser (1987, 1988a, 1988b, 1988c, 1989) have characterized plantations as systems based more on economics and relationships of power, rather than on race and status. There has been a gradual movement away from a focus on the descriptive and static products of social interaction - race and status - to the study of the process of "cultural interchange" (Singleton 1990:74), and to the process of creolization (Ferguson 1992; Sobel 1987). This new focus has permitted the study of the complexity of relationships, and of the dynamic processes of change within plantation society.

All of these studies have relied on the ability either to control a site's spatial components, in order to describe synchronic intrasite relationships, or to control the temporal components to describe diachronic change. Now, according to Howson, "what is needed is a contextual description of material culture that is conscious of both plantation...relations and historical processes of culture change" (1990:90). The ideal site for a study of this type would be one at which patterns of social, economic, and material relationships could be defined spatially, and at which there is sufficient temporal control to permit confident description of change in these patterns. Research at Nina Plantation (16PC62) has demonstrated sufficient preservation of the main house and ancillary structures, the detached kitchens, and the

nearby dwellings for household slaves/servants, to support the conduct of effective spatial analysis. Additionally, because of the mid-nineteenth century flood deposit that sealed and separated the antebellum middens from later cultural deposits, the stratigraphic control vital to the study of change over time is available. Unfortunately, not all of the key elements of plantation society are represented in the Nina Plantation data. The quarters for field slaves were outside both the area of potential effects and the project area, and these areas were only cursorily examined during prior Phase II testing (Yakubik 1994). While these data have been incorporated to some extent in data analysis for this project, the primary comparative effort focused on the relationships between the planter and the slaves/servants employed in a domestic capacity. These may have differed from more general planter - slave relationships, not only because of the increased interaction between these groups in the work environment, but they also may have been affected by age and gender.

Spatial Relationships

Contemporary scholarship regarding landscapes and their meanings holds that landscapes and the spatial arrangements of plantation sites in particular are the results of conscious efforts to "provide housing, accommodate the system of production, facilitate communication and transportation, mark social inequalities, and express aesthetics" (Rubertone 1989:50). Landscapes and spatial relationships in both rural and urban settings also are seen as fluid and dynamic (Stewart-Abernathy 1986; Rubertone 1989; Moir 1982; Rotenizer 1992), and as reflective of changing social perspectives. Given these theoretical constructs, it would be expected that documented changes in economic fortunes, the size and nature of the work force, or changes in ownership would be reflected in a variety of temporally identifiable architectural features and artifact patterns at Nina Plantation.

The original proposal submitted for the data recovery at Nina Plantation suggested that investigation of the pattern of structures, landscape features, and activity areas that defined the use of space at Nina Plantation should be based on a modified concept of farmstead proxemics posited by Moir (1982). The concept of farmstead proxemics assumes that recovered archeological remains will reflect definite spheres of organization and activity. Originally applied to small farmsteads, farmstead proxemics is useful in providing a theoretical paradigm for the analysis of the spatial organization of large agricultural complexes such as Nina Plantation. Moir's (1982) model defined two yard areas centered on the main farm residence. The immediate active yard was a relatively "clean" space surrounding the main dwelling, and it was characterized by a relative absence of sheet midden deposits and structural features. The "outer active yard," in which domestic and agricultural dependencies and activity areas were located, was characterized by relatively dense deposits of sheet midden refuse, and by artifacts and features relating to those ancillary structures.

A comparative predictive model for structures associated with specific Louisiana Plantation types was generated during study of the Willow Bend area conducted by R. Christopher Goodwin & Associates, Inc. (Goodwin et al. 1989). This model suggests that typical nineteenth century sugar plantation complexes incorporated two classes of structures: domestic and service structures, and industrial structures. The Nina Plantation study has focused on the domestic and service structures at the plantation. These typically included the Great House and its associated dependencies, removed from the industrial areas and from the slave quarters; a manager's house, located in closer proximity to both slave dwellings and industrial buildings, and the slave/laborer cabin area, generally arranged linearly and located closest to the industrial complexes. This arrangement appears to correspond closely to that depicted in the levee setback map of Nina Plantation in 1890.

Comparison of Slave/Freedman and Planter Material Culture

A number of recent plantation studies have described the difficulty of conducting comparative planter - slave analysis in the absence of adequate definitions of the contexts of production, distribution, use, and discard (Howson 1990:84). This difficulty has led to often facile conclusions about the similarity of the material remains produced by these groups (Joseph 1989), or to particularistic searches for "Africanisms" (Emerson

1988; Yakubik 1994b). The search for general patterns of material culture that would define the presence of planters, slave, overseers, or poor whites (Otto 1984), and the search for material correlates of status (Adams and Boling 1989), continue to drive much plantation archeology.

The descriptive elements of these studies, however, have proved extremely useful in characterizing the ceramic assemblages associated with planter and slave occupations. The synthesis of data from sites on the Georgia and South Carolina coast that was provided by Adams and Boling (1989) suggested discernible differences in the frequency and type of ceramics recovered from planter and slave sites; in the types and diversity of vessel forms from each site; and, in the relative economic scale represented by the CC index values calculated for assemblages from each type of site. The CC index, devised by George Miller (1980, 1991), employs original price lists to establish a comparative scale of consumer ceramic costs. The judicious use of analytical procedures such as this ceramic price scaling, the comparison of vessel forms, and the degree of intra-site matching of ceramic types and of other artifact classes, will aid in the detection of social interaction and differentiation between planter and slave groups.

However, nearly all recent researchers caution against too facile an application of models produced by Adams and Boling's (1989) study. They note that regional and temporal variation is likely, and that other variables, such as the economic status of the planter, or even the data recovery strategies employed, all must be factored into the comparative equation (Adams and Boling 1989). Orser (1992) also suggests that artifact assemblages associated with tenant farming and other systems of postbellum labor will exhibit much different patterns of material culture.

Analysis of the material culture from the planter and slave/freedman domains at Nina Plantation should seek to generate an independent set of data comparable to the models established for the sites in Georgia and South Carolina, as well as from similar contexts in Louisiana. Comparisons with these models then can be attempted, and the degree of correlation or deviation from them can be established. Issues of regionalism, ethnicity, temporal differences, and differential access to distribution networks should be addressed during analysis and interpretation of the data.

Analysis of Diet at Nina Plantation

The inclusion of a systematic sampling strategy and thorough analysis of the resultant ethnobotanical and faunal samples was included in the research design for archeological data recovery at Nina Plantation (16PC62). The combination of botanical and faunal analyses can establish dietary resource patterns, and consumption patterns both between and within the socio-economic groups represented at the site.

Applicable faunal analyses should include assessment of the numbers and the taxa of the faunal remains present in the archeological remains at Nina Plantation. Comparative studies of faunal remains from slave and planter sites in coastal Georgia and South Carolina, and from the Elmwood Plantation study (Goodwin et al. 1984), have suggested that distinct quantitative differences, both in the numbers of animals consumed and in the variety of taxa utilized for food purposes, was discernible on such sites (Reitz 1987). Analysis of faunal specimens for evidence of butchering practices, and to determine the units of acquisition and relative meat yields, also should provide insights into the type and adequacy of the diets enjoyed by planters, slaves, and postbellum laborers at Nina Plantation (Reitz 1987). Dietary comparisons between planters, slaves, and freedmen will be made, and these will be compared with patterns observed in other regions of the plantation South (Reitz et al. 1985; Otto 1984).

Summary

The research design for the data recovery excavations at Nina Plantation includes both spatial and temporal analyses in order to elucidate three major research issues. These include an investigation of the settlement pattern at the plantation, diachronic and synchronic comparison of the material culture of planter and slave/freedmen occupations, and investigation of the dietary patterns of the planter, slave, and freedmen populations. The results of these analyses are presented below in Chapters VIII and IX of this report; they are summarized in Chapter X.

CHAPTER VII

ARCHIVAL, FIELD, AND LABORATORY METHODS, AND TYPOLOGIES

Introduction

The mitigation plan developed for Site 16PC62 required the design and implementation of a controlled, scientifically-executed archeological data recovery program. The methods utilized during data recovery were carefully designed to address not only the specific research questions formulated for this project (See Chapter VI), but also ". . . to take into account the environmental and historical processes which have shaped the study area" (Plog 1974). In addition to archeological field and laboratory research, data recovery at Site 16PC62 (Nina Plantation) included archival, cartographical, geomorphological, paleoclimatological, historical, zooarcheological, and ethnobotanical research. The integration of these data sets provides a more thorough understanding of the nature of the nineteenth century occupation of the site. This chapter describes the methods utilized in the field, and during subsequent analyses of recovered data.

Archival Research for a Study of Nina Plantation

The archival research for the Nina Plantation Project emphasized primary sources, including even the visual arts. Once hung in Pecan Grove Plantation, the portraits of Jean Ursin and Octavine Jarreau, painted in 1826 by Louis Antoine Collas, now are included in the collections of the Louisiana State Museum, New Orleans. To the informed observer the paintings provide indications of the economic substance and the furnishings of the planter's household.

Manuscript collections also were examined. The Marcelle Jarreau Bendernagel Genealogical Records included a typescript, ca. 1966, relating to the Jarreau family. The Rosemonde E. and Emile Kuntz Collection included two acts of sale and a land claim relating to Jean Jarreau. The Bendernagel and Kuntz collections are housed in the Manuscripts Division, Howard-Tilton Library, Tulane University, New Orleans, Louisiana.

Two claims in the French and American Claims Commission records, No. 197 and No. 292, were discovered to have relevance for the study of Nina Plantation. These records are housed in the National Archives, College Park, Maryland. Other records from the National Archives, Washington, D.C., include Transit [Books] No. 996 and 999, surveyor's notebooks of the Waterloo vicinity. The Cartographic Division of the National Archives provided an important source of maps of the project area.

Other records of the Federal Government include the essential Census Population Schedules compiled every ten years. A secondary source, Menn's *Large Slaveholders of Louisiana in 1860* (1964) conveniently presents in tabular form a compilation of the following schedules: Schedule No. 1, Free Inhabitants; Schedule No. 2, Slave Inhabitants; Schedule No. 4, Productions of Agriculture; and Schedule No. 6, Social Statistics.

The records of Pointe Coupée Parish, provided by the Clerk of Court, included Conveyance Books, Original Acts Books, and Tax Assessment Rolls. A two volume manuscript edition of early surveys and plats of Pointe Coupée Parish (1818-

1822; 1822-1827) also is house with the Clerk of Court.

The published multi-volume records of the Catholic Diocese of Baton Rouge detail the births, deaths, baptisms, and marriages of the occupants of the plantation house at Nina Plantation in the first half of the nineteenth century.

Contemporary periodicals examined included the Pointe Coupée *Democrat* on microfilm at the Howard-Tilton Library, Tulane. The *Louisiana Planter and Sugar Master*, Louisiana Collection, Howard-Tilton Library, also provided specific details of the plantation and its vicinity. The Obituary Index, an unpublished compilation of the Louisiana Division, New Orleans Public Library, comprises death notices from many Louisiana newspapers.

As always, the annual *Statements of the Sugar Crop* proved essential to research on a Louisiana sugar plantation. Pierre Degelos provided the first listing of sugar planters in his "Statement of the Sugar Made in Louisiana in 1828 and 1829." Compiled from 1844 to 1862 by P. A. Champomier, the popular series was resumed after the Civil War by Louis Bouchereau (1867-1877) and Alcée Bouchereau (1877-1917). Frank M. Cayton's *Landings* (1881) provided an important contemporary parallel source, as well.

Field Methods

Field techniques utilized during this investigation were formulated to identify, record, describe, and interpret cultural features located within the area of potential effect. Because the Mississippi River has deposited approximately 1 m (3.3 ft) of fluvial sediment on the site during the years since it was abandoned, heavy equipment was necessary to remove the overburden that covered occupational levels at the site. Mechanical removal of overburden was followed by hand excavation in order to recover the archeological data required to investigate thoroughly the historical occupation of Nina Plantation.

<u>Reconnaissance and Ethnobotanical Survey</u>

Initially, and at the advent of Phase III fieldwork, reconnaissance survey of the site was conducted prior to establishment of the permanent site grid. Exploratory trenches previously excavated by Earth Search, Inc. (Yakubik et al. 1994) were located and then flagged. In addition, a series of east-west transects were established in anticipation of ethnobotanical survey, which was designed to elucidate the project area specific land use history and ecological succession. Ethnobotanical survey was conducted along survey transects spaced 50 m (164 ft) apart; the vegetation along these transects was identified, recorded, and all of the plant species present ultimately were mapped. If field identification was not possible at the time of the survey, samples were collected for later identification in the laboratory. The results of this survey are discussed in Chapter II; Appendix VIII of this report reviews the results of the ethnobotanical survey in detail.

After both the archeological reconnaissance and ethnobotanical surveys were completed, all vegetation was removed from the area of potential effect, and from a 20 m (66 ft) wide corridor located immediately west of this area. This corridor was used as a staging area, and for the disposal of the approximately 3,400 m^3 (120,069 ft^3) of alluvial overburden that was removed from the area under investigation.

<u>Survey and Mapping Methods</u>

Following removal of the vegetation, a grid was superimposed across the site area. The survey was completed by a professional surveyor using a TOPCON GTS-303 5 Electronic Distance Meter (EDM), and a Hewlett-Packard 48SX Data Collector, with a Tripod Data Systems Surveying interface. A series of traverses were executed from a known datum located on the existing artificial levee; this allowed the site to be fixed both in location and elevation. A permanent site datum then was established in the southwest corner of the project area; it was assigned grid coordinate N100 E100. Additional grid points were established at 30 m (98.4 ft) intervals, extending along a baseline situated north of the site datum, and at 15 m (49.2 ft) intervals in areas located east of the baseline. Contiguous 30 m (98.4 ft) squares were designated Blocks A – I (Figure 2). Use of the EDM and Data Collector permitted for subcentimeter accuracy in both grid placement and in the collection of elevation data points. In addition to the placement of the site grid, all topographic features were noted and recorded, and each previously located Phase II trench (Yakubik 1994) was re-recorded and tied both to the site grid and to the Louisiana State Plane coordinate system.

Magnetometer Survey

Following establishment of the site grid, a magnetometer survey was conducted within the area of potential effect using a Geometrics 866 proton precession monitor. Magnetometer survey was conducted at 2 m (6.6 ft) intervals throughout Blocks A – I. The results of magnetometer survey refined identification of structural locations, and proved useful as an indicator of the presence of subsurface cultural features. The results of the magnetometer survey are discussed in Chapter VIII of this report.

Testing and Removal of Overburden

After the ethnobotanical and magnetometer surveys of the project area were completed, alluvial overburden was removed from Blocks C, D, and E. These areas were selected based on a thorough review of the reported Phase II results, of all available historical cartographic data, of the results of the magnetometer survey, and of the results from reconnaissance of the eroding river bankline. A CAT 225 excavator, a bulldozer, and a rubber-tired backhoe were used to remove mechanically the alluvial deposits from these three block areas. The work was monitored closely by professional archeologists experienced in the use of mechanical excavation. Approximately 3,400 m^3 (120,069 ft^3) was cleared to the level exposing debris associated with the final occupation of the site. The wide contiguous exposure achieved through the mechanical stripping of the alluvial overburden enabled the simultaneous exposure of numerous architectural and midden features, and led to enhanced intra-site interpretations regarding architectural patterning, the location of numerous activity areas, and/or yardscape proxemics.

A total of 17 backhoe trenches, with a combined total length of 297 m (974 ft), also were excavated in the project area (Figure 2). Each trench measured approximately 1.8 m (5.9 ft) in width; this greater width enabled a clearer view of the site stratigraphy, and of any features encountered during excavation. The placement of the trenches was intended to help in the identification of activity areas within the site, to aid in the characterization of portions of the site lying outside of the major area of occupation, and to enable examination of deeper stratigraphic levels of the site. All trenches were assigned sequential numbers (1-17), and they also were designated by their associated grid coordinates. A list of the trenches, their lengths and depths, and the reason(s) for their excavation can be found in Appendix I of this report. As noted above, trench excavation was monitored closely by archeologists; all excavated soils were segregated by level, and were examined for artifacts by raking and troweling. Recovered artifacts were bagged by trench, section, stratum, and depth. Stratigraphic profiles then were prepared for representative sections of each trench, and soil colors were recorded using Munsell Color Charts and standard soils nomenclature. The location and depth of each excavated trench was recorded using the EDM and Data Collector. Finally, all trenches were photographed prior to completion of the recordation process.

Hand Excavation

Following mechanical removal of overburden, all exposed features were recorded and prepared for hand excavation. Excavation units then were positioned to allow investigation of these features, or to allow for the characterization of the exposed midden. While the extent or boundaries of the most recent cultural midden was apparent after removal of the overburden, a number of units were positioned to corroborate the extent of the midden, and to provide a representative sample of this midden deposit from different portions of the site. A total of 251 m^2 (823 ft^2) were hand excavated in 170 units during this phase of fieldwork; a list of all excavated units, and the rationale for their placement is included in Appendix I of this report.

Hand excavation was conducted in 1 x 1 m (3.3 x 3.3 ft) units, although some of the units were expanded to incorporate a number of subsequently identified features. Each unit was designated by block letter and then sequentially by the order in which it was excavated within the block. For example, the first unit excavated in Block C was designated Unit C/1, while the first unit excavated within Block E was designated Unit E/1. All features identified during excavation were recorded and designated with a sequential numeral. To avoid confusion, these numerical designations were not tied to the block system, but

were part of a site-wide system. All units, features, and trenches also were labeled with their respective grid coordinates.

To maintain vertical integrity after the removal of approximately 1 m (3.3 ft) of overburden from across the site, a datum was established in the southwestern corner of each unit. During the first stage of excavations, the elevation of each unit datum was reestablished relative to the site datum. All unit data points also were recorded with the EDM. All elevational measurements recorded during excavation subsequently were converted to the National Geodetic Vertical Datum (NGVD) plane (Appendix I).

Each unit was excavated following the natural stratigraphy of the site, with 10 cm (3.9 in) arbitrary levels maintained within strata. In units that displayed complex stratigraphy, levels were used to designate any segregated excavated soils. For example, in units that incorporated the outside wall of a structure, separate levels were assigned to soils from the interior and the exterior of the structure, despite the fact that these levels originated from the same horizontal plane. Locational and elevational data then were recorded for each excavated level.

All excavated soils were screened through 0.64 cm (0.25 in) wire hardware mesh to ensure artifact recovery. The recovered cultural material was bagged by unit, stratum, level, and depth. All features were drawn in plan and profile, and then photographed; in the case of brick features, detailed drawings were made to illustrate the pattern of brickwork and the number of courses. In most cases, the units were placed to provide information about the relationship between features and the surrounding site stratigraphy. Soil features were drawn in plan, and then sectioned. A minimum of two liters of fill was retained from each excavated soil feature; if a feature contained less than two liters of soil, all of the excavated soil was retained for flotation and/or for specialized analysis. Detailed unit and feature plans were prepared at relevant stages during the unit and feature excavation process. Cross-sections of each excavated soil feature were drawn, and stratigraphic soil profiles were prepared of each excavation unit; soil characteristics were recorded using Munsell Soil Color Charts and standard soils nomenclature. Detailed field notes were prepared that described each excavated level and all associated features. All units and features were photographed prior to completion of the archeological recordation process. After completion of excavation at Nina Plantation (16PC62), each block, unit, and trench was backfilled.

Laboratory Methods

The laboratory methods and techniques employed during this project were based on both the research objectives (See Chapter VI) and on the nature of the recovered materials. More specifically, laboratory methods were designed to provide the data required to address the questions and test the hypotheses presented in both the research design and in the Scope of Work for this archeological data recovery project. An inventory and initial descriptive analysis included all classes of recovered cultural material. This inventory provided basic descriptive information fields about artifact morphology and typological placement. This information also was encoded into computerized artifact databases, created with Microsoft Access 2.0. Basic information in each database entry included provenience data, material type, and functional categories.

To facilitate extra-site comparison, the analysis included functional categories originally devised by South (1977); also included was a set of more specific categories utilized during this analysis. While the classifications developed by South were useful for defining broad regional patterns of settlement in the Carolina Piedmont, they are of less utility in identifying more subtle intra-site activities and interactions. For example, South's classificatory system combines in a single category artifacts used for food consumption, food preparation, and food storage, thereby blurring any distinctions associated with these activities within a site. The system also does not take into account the multiple functions some artifacts have, or the recycling of certain artifacts after discard.

The 20 functional categories used during the Nina Plantation analysis are listed in Appendix I, along with examples of the artifact types included in each category. This classificatory system shared similarities with those devised by Yakubik et al. (1994), and by Wilkie and Farnsworth (1992), but differed in its allowance for more than one function for each artifact. In general, the function of an artifact at the time of manufacture

was recorded as Nina Function 1. Any known or likely secondary use was recorded as Nina Function 2. For example, some bottles were recorded both as containers for consumption and for storage, reflecting the common reuse of these vessels. The intention of this dual functional classification was to investigate possible differences between artifact acquisition and use among different groups in the plantation community.

Recovered materials were divided into eight groups for laboratory analysis; these included ceramics, glass, nails, miscellaneous artifacts, buttons, beads, faunal remains, and botanical materials. The miscellaneous artifact category included all artifacts that did not easily fit into the other categories. It also included artifacts that, according to material of manufacture, could have been subsumed under another category, but that seemed to fit more easily into the miscellaneous category. For example, porcelain doll parts, while ceramic, were functionally more similar to items included in the miscellaneous database. Similarly, glass marbles were included in the miscellaneous database with all the other marbles, rather than in the glass database.

The following discussions address the diagnostic characteristics utilized during the analysis and interpretation of the various artifact subassemblages, and identify the specific methods applied to each class of cultural material. More detailed statistical analysis carried out for the various artifact subassemblages are discussed in detail in Chapter IX.

Ceramics

Ceramic analysis was conducted in two stages. The primary analysis entailed a detailed descriptive and functional examination of each recovered ceramic sherd. Secondarily, a minimum vessel analysis was conducted; this enabled an estimated count of vessels, as well as determinations of vessel form.

All ceramic sherds recovered from the excavations at Nina Plantation (16PC62) were analyzed using a variety of methods. Ivor Noël Hume (1970) developed a concise taxonomy of seventeenth and eighteenth century English and northern European ceramic types, which has been refined in subsequent reports by a number of different authors. However, nineteenth century ceramics, are characterized by very gradual refinements of paste and glaze, and therefore are more difficult to classify. Miller (1980) suggested that classification of nineteenth century ceramics should be based primarily on decorative type and form. This method, however, obscures variability in paste and other important chronological information. Worthy (1982) suggested a classification based on an integration of technology, form, function, and decorative attributes. Because most of the ceramics recovered from Site 16PC62 were too fragmentary to allow for certain identification of function or form, this suggestion was not practical. The basic classificatory typology utilized during this analysis combined elements previously suggested by Miller (1980 and 1991) and Worthy (1982), with those methods established by Goodwin and Yakubik (1982) and Yakubik et al. (1994). These methods were based primarily on paste color and type, and secondarily on glaze, decoration, and form. Recorded attributes included paste, glaze, decorative technique, and pattern. Transfer printed and hand-painted patterns, and maker's marks were described and identified when possible, using a variety of sources, including Coysh and Henrywood (1982), Kovel and Kovel (1986), and Cushion (1976). Vessel form and function also were noted where possible. The following discussion summarizes the ware types, and the diagnostic attributes noted during the analysis of the ceramics recovered during excavation at Nina Plantation (16PC62). The methods associated with minimum vessel analysis are discussed subsequently.

Ceramic Type Descriptions

Creamware, Pearlware, and Whiteware. These three ceramic types are closely related, and differ only in a gradual refinement of paste and glaze over a period that extended for approximately 100 years. Creamware, first introduced in the early 1760s, dominated the Staffordshire ceramic market during the second half of the eighteenth century (Miller 1991:1). It was characterized by a slightly yellowish tint, yellow-green pooling of glaze around footrings and in crevices, and by a porous cream to buff colored paste. Very few creamware sherds were recovered from Nina Plantation (16PC62); this was not unexpected given the presumed 1820s - 1890s occupation of the site.

Pearlware developed as an improvement to creamware during the 1780s (Miller 1980:2), and gradually replaced creamware in popularity. While pearlware paste was only slightly lighter than that of creamware, it was whitened further by the addition of cobalt oxide to the paste (Majewski and O'Brien 1987:118). Cobalt also was added to the lead glaze as a whitener. This resulted in the diagnostic blue tint and blue pooling found around the footrings and in the crevices of pearlware vessels.

There are no specific dates for the development of whiteware, though it generally is agreed that a recognizable form appeared during the 1820s (Miller 1980:2; Yakubik et al. 1994:2). Whiteware represents a gradual evolution from pearlware, and it is characterized by many transitional variations. Cobalt oxide was used to whiten the paste in early varieties; however, for most of the nineteenth century, a nearly white body with a clear lead glaze dominated the ceramic tableware market. A clear alkaline glaze also was used on whiteware bodies, though less frequently than the lead glaze. Almost never used on decorated ceramics, alkaline glazes have a slightly greenish tint that is visible in the crazing of the glaze and in crevices where the glaze is thicker (Majewski and O'Brien 1987).

While creamware, pearlware, and whiteware all were decorated, a greater variety of techniques were employed on pearlware and whiteware. Annular banding, finger painting, and dendritic patterns (mocha) also were employed on yellowwares; they are discussed later in this section.

On pearlwares and whitewares, both blue and polychrome hand painting was common. Beginning ca. 1820, floral motifs were especially favored. Hand painted floral motifs continued in use through the last quarter of the nineteenth century, although popularity dipped in mid-century and revived again in the 1870s (Miller 1991:8). Introduced circa 1840, flow blue and flow purple were used both for hand painted and transfer printed designs. The addition of ammonium chloride to the kiln during the final firing caused the pigment to spread into the glaze, and created a blurred image with concentrations of color around the original decoration. Hand painted flow blue designs usually consisted of floral motifs.

Transfer printing was common on creamwares, pearlwares, and whitewares. Underglaze blue transfer printing was introduced Staffordshire ceramics circa 1783, and quickly gained popularity. The earliest patterns consisted of oriental scenes, followed during the second decade of the nineteenth century by landscapes and American scenes, and by romantic scenes in the 1830s. Color also serves as a chronological indicator. For example, blue printing was popular throughout the nineteenth century, but dark blue prints enjoyed popularity in the 1820s, while purple, brown, black, green and red were in use during the 1830s and 1840s (Miller 1991:8). By the middle of the nineteenth century, transfer printing lost popularity, although it continued to be produced throughout the century.

While numerous transfer patterns were recovered during excavations at Nina Plantation (16PC62), only a few could be identified reliably. Two identified blue transfer patterns on pearlware included the "Lions" pattern, produced by William Adams of Staffordshire, England, between 1795 and 1840. This ceramic pattern was represented by more than 50 vessels. It is illustrated in Coysh and Henrywood (1982:221), and in Figure 23. A second pattern was identified on a small bowl displaying a scene with an image of George Washington. It had an impressed backstamp of "WOOD," which identified the manufacturer as Enoch & Ralph Wood and that placed its manufacture between 1784 and 1790 (Cushion 1976:123-124; Coysh and Henrywood 1982:408) (Figure 24). A number of other transfer print patterns associated with recovered pearlware vessels could not be identified.

Blue transfer printing was the most common form of decoration associated with the whiteware sherds recovered from the excavations at Nina Plantation (16PC62). Purple and brown transfer prints also were recovered. Of the patterns that could be identified positively, the most frequent was a variation of the "Asiatic Pheasants" pattern, a very popular design manufactured by a number of different potteries. While no specific dates are available for this widely available pattern, its manufacture continued throughout the last half of the nineteenth century (Coysh and Henrywood 1982:29) (Figure 25). Another identified blue transfer pattern was the "Lombardy" pattern,

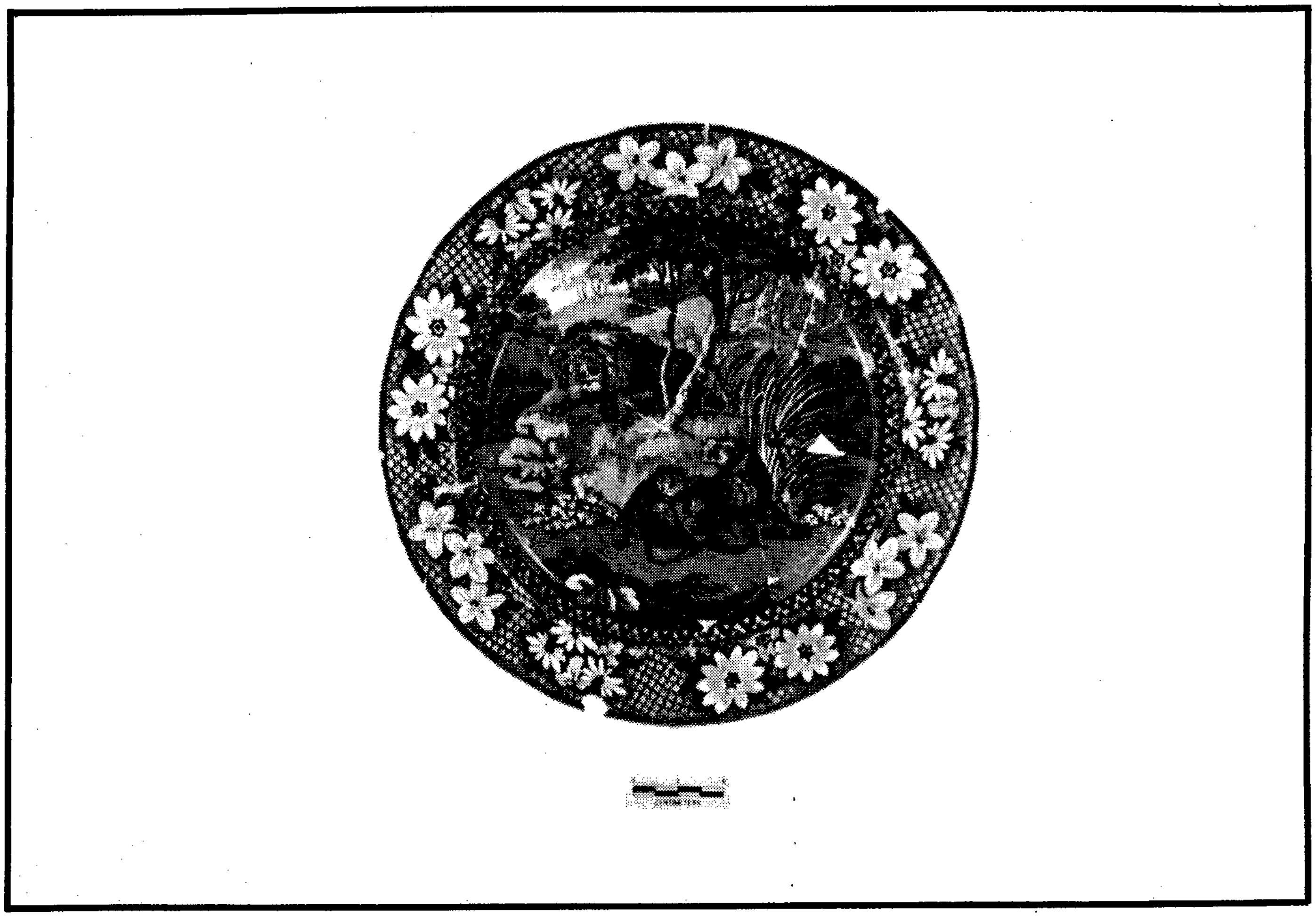


Figure 23. Reconstructed transfer-printed pearlware "Lions" pattern plates (FS 523, 530).

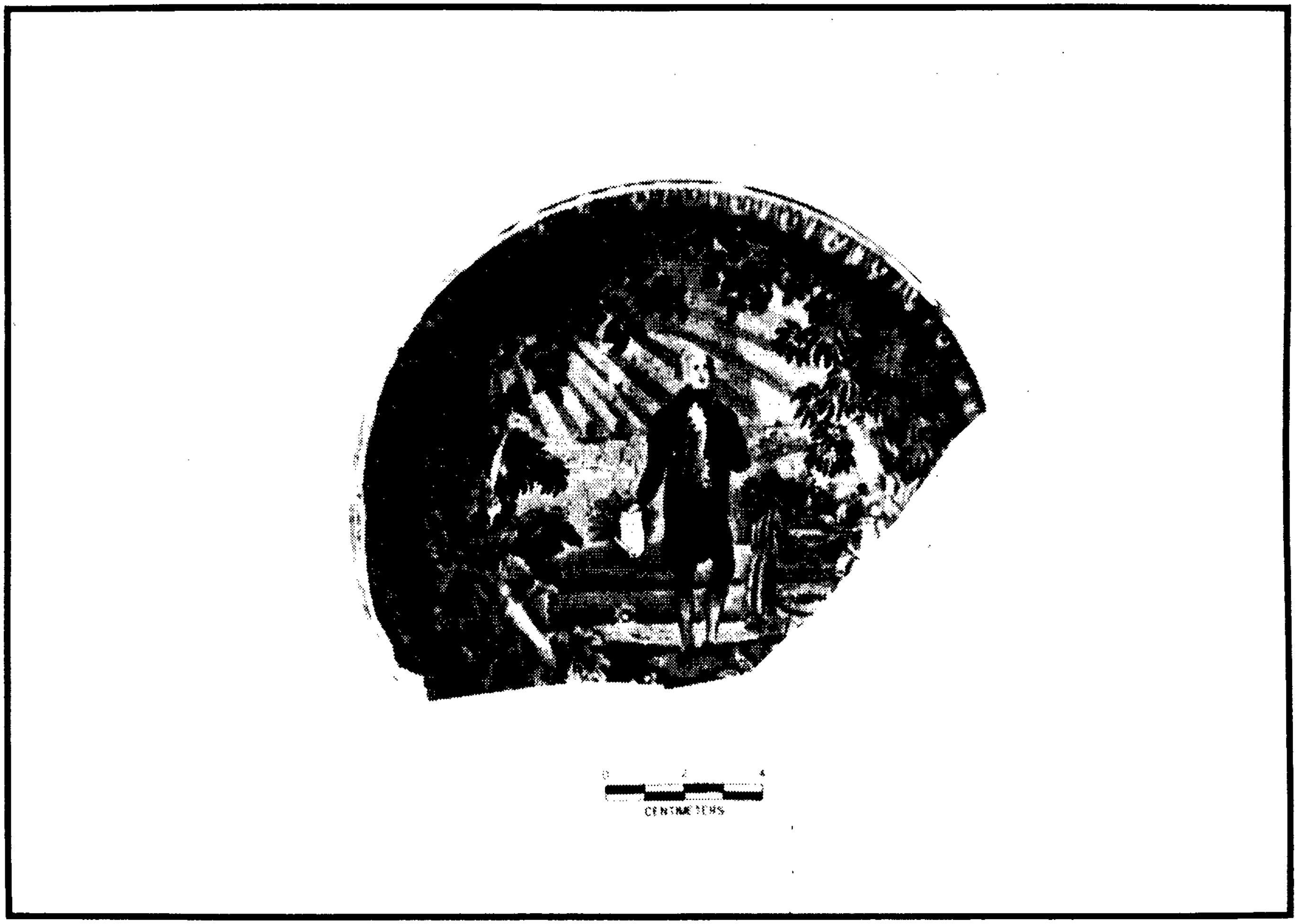


Figure 24. Portion of a transfer-printed pearlware "Washington" pattern bowl (FS 1210).

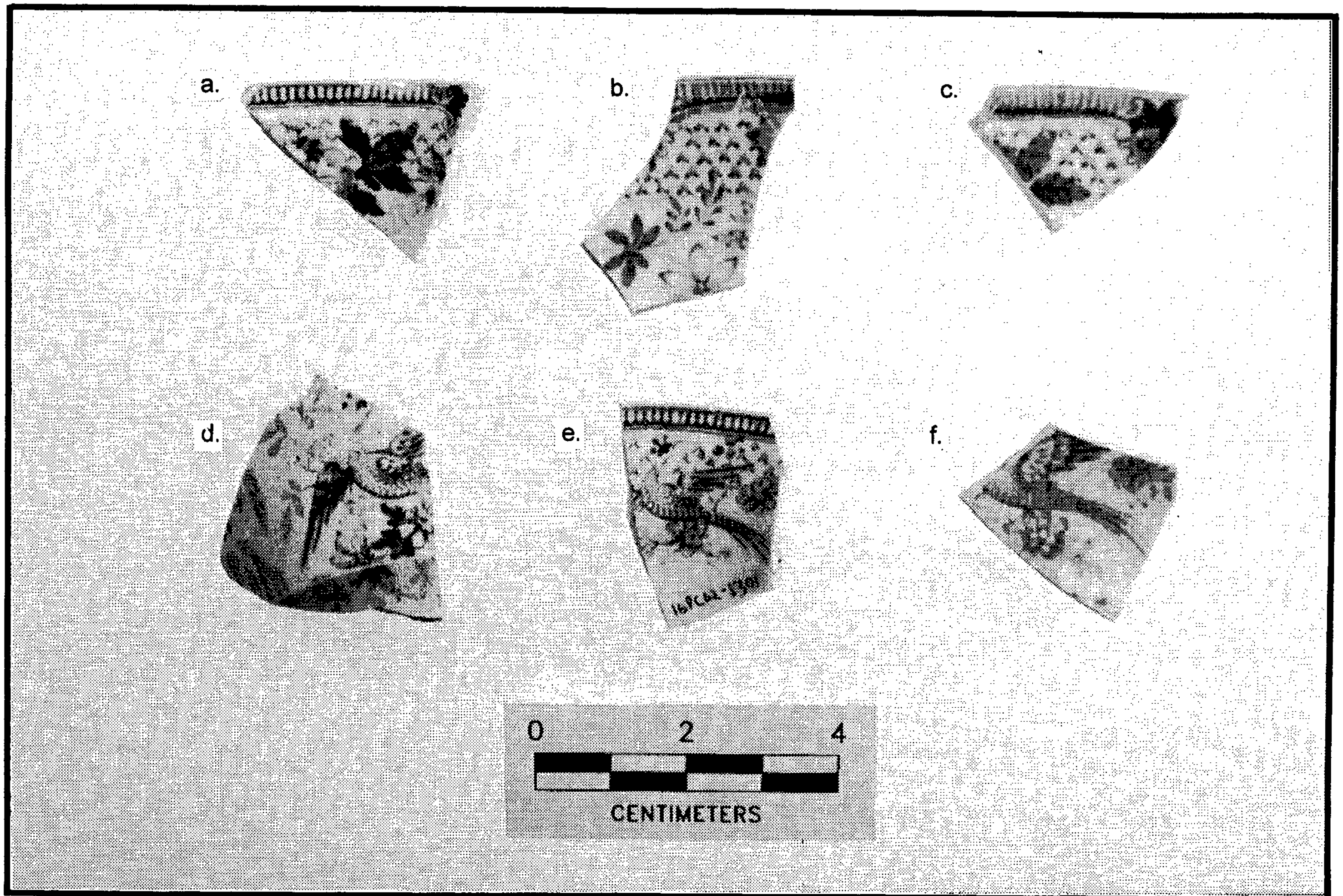


Figure 25. Selected transfer-printed whiteware “Asiatic Pheasant” pattern vessel fragments: (a, d, e) purple transfer-printed rim and body sherds (Vessel No. 148); (b, c, f) blue transfer-printed rim and body sherds (Vessel No. 179).

manufactured by Joseph Heath & Company of Staffordshire, England (Figure 26). Characterized by a scene of an Italian landscape replete with gondolas and Lombardy poplars, these vessels were identified by their floral borders, and by printed back marks with both the pattern name and maker's name, "J. Heath & Co." (Coysh and Henrywood 1982:224). The company was in operation from 1828 to 1841 (Godden 1964:318-319).

Purple transfer printing was second to blue in frequency at Nina Plantation (16PC62). Identifiable patterns included the "Asiatic Pheasants," and two other designs. One of these was a variant of the "Beehive" pattern, represented by a single vessel displaying an image of a conical beehive in front of floral decoration (Coysh and Henrywood 1982:37). No dates were available for this pattern, but the purple transfer printing suggests a date range extending from 1829 to 1850 (Table 7).

Another purple transfer printed pattern identified at Nina Plantation was "The Residence of the Late Richard Jordan, New Jersey," manufactured by Joseph Heath & Company of Staffordshire, England. Produced primarily for the American market, this pattern was issued in remembrance of Richard Jordan, a prominent nineteenth century Quaker minister, who was depicted standing by his two story house (Figure 26) (Hughes and Hughes 1957:149). A printed maker's mark reads "The Residence of the late RICHARD JORDAN New Jersey," and "J. H. & Co". This popular pattern was commissioned by friends of Richard Jordan after his death in 1826, but was manufactured ca. 1836 (Larsen 1975:181). In addition to numerous examples of this purple transfer printed pattern, one vessel printed in dark cobalt blue also was recovered.

Rim sherds from red and black transfer printed "ABC," or alphabet patterned plates, were recovered from the excavations at Nina Plantation (16PC62). These plates, produced for children, had the complete alphabet printed around the wide rim band (the marley), and usually were embellished with various scenes in the center of the plate. Alphabet plates were produced between the late 1820s and the end of the nineteenth century (Lindsay 1994:35).

Two patterns that combined both brown transfer printing and hand painting were recovered. One displayed a printed floral border to which small spots of cobalt and green, pink, purple, and yellow hand painting were added. The other pattern featured a large and elaborate floral transfer print, with green, blue, pink, and yellow hand painting (Figure 27). Neither of these patterns was identified specifically.

Edging, another type of decoration, was used primarily on flat vessel forms, including plates and platters. Both blue and green shell edged pearlware and whiteware vessels were popular, and were produced from ca. 1780 through the 1890s; the height of their popularity lasted only through the 1860s. Green shell edged vessels, however, were unusual after ca. 1840. Vessels edged in red and yellow also were produced, though they were not particularly popular in the American markets (Miller 1991:9).

Annular and banded decoration accounted for a large number of sherds recovered from Nina Plantation. Annular wares contained two or more encircling bands around the vessel. These bands were of varying thickness and usually were brown to black in color, although other colors were represented in the assemblage from Nina Plantation. Annular decoration frequently was combined with other decorative techniques on a single vessel. Finger painting or marbling commonly was associated with annular bands. These wares had trails of polychrome slips (usually white, blue, and brown or black) applied to the vessel by hand. A variation of this was combed decoration, in which a comb-like tool was used to drag the slip. Similar in appearance to combed decoration were vessels that had multiple thin trails of white slip laid in geometric patterns (Figure 28). Finally, a common method of decoration employed the application of a mixture of tobacco juice and urine to a vessel prior to firing; this produced the distinctive dendritic pattern referred to as "mocha" (Figure 29). All of these techniques usually were combined with annular bands bordering the field of decoration. Annular pearlware and whiteware were referred to in potters' price lists variously as "dipped," "colored," "mocha," and "banded" wares; they were popular until ca. 1840 (Miller 1991:6), although they were produced throughout the nineteenth century. Annularwares were produced in hollow forms only, such as mugs, bowls, and chamber pots.

The application of decoration with a cut sponge began in the 1840s, and continued

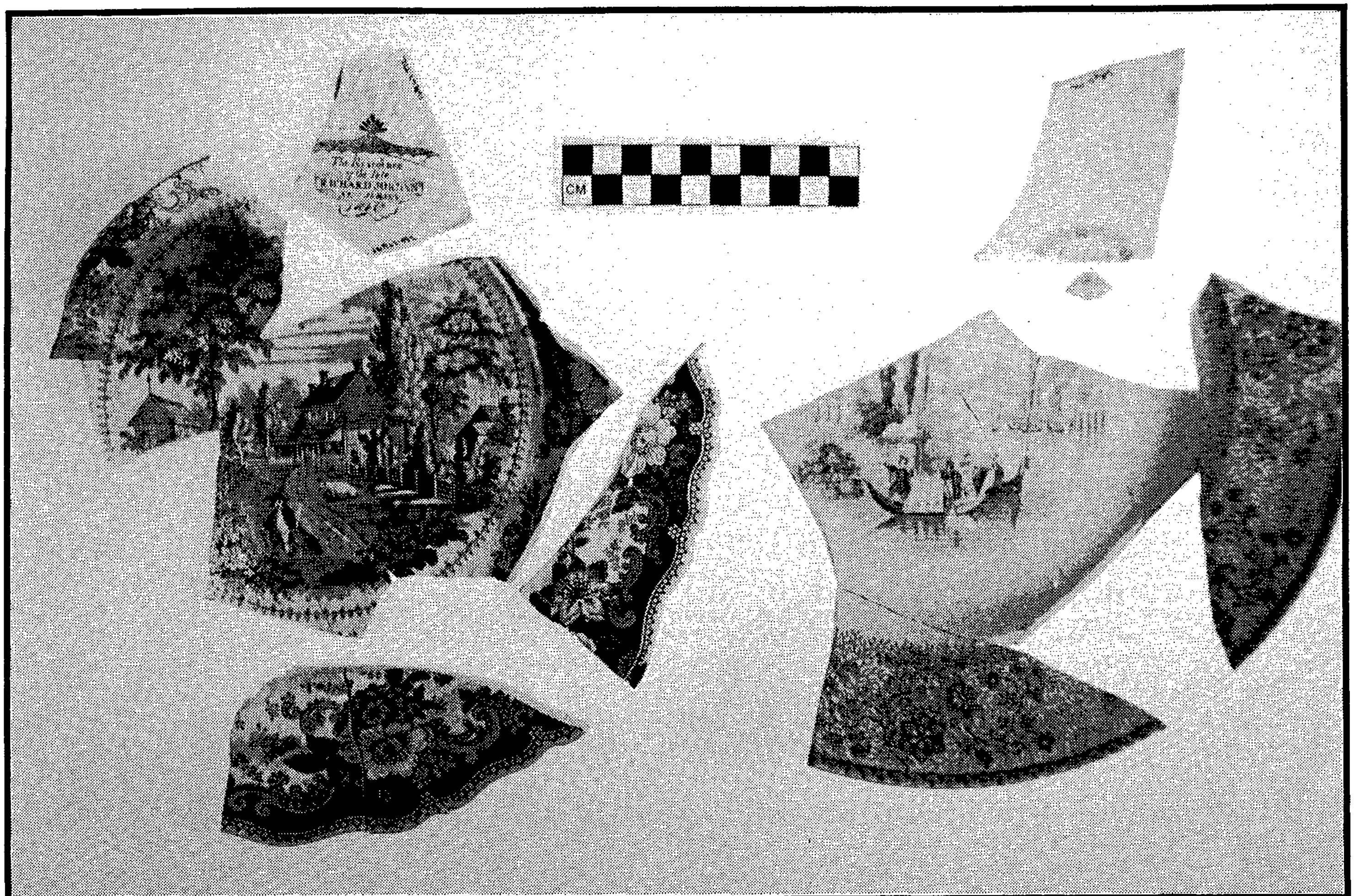


Figure 26. Partially reconstructed transfer-printed whiteware plates with patterns by Joseph Heath & Company (note maker's mark above each): (from left to right) "The Residence of the Late Richard Jordan, New Jersey" pattern (Vessel No. 502, 504); "Lombardy" pattern (Vessel No. 552).

Table 7. Diagnostic Ceramic Attributes.

TYPE OR ATTRIBUTE	ASSOCIATED DATE	REFERENCE
	Creamware	
Plain	Ca. 1762 - 1820	South 1977
	Pearlware	
Plain	Ca. 1780 - 1840	South 1977
Shell Edge	Ca. 1780 - 1820	Miller 1991
Underglaze Hand Painted	Ca. 1780 - 1840	South 1977
Finger Painted	Ca. 1790 - 1820	South 1977
Annular	Ca. 1790 - 1820	South 1977
Mocha	Ca. 1795 - 1820	South 1977
Transfer Print	Ca. 1795 - 1840	South 1977
	Whiteware	
Plain	Ca. 1820 - 1900	South 1977
Transfer Print	Post ca. 1820	Miller 1991
Dark Blue Transfer Print	Ca. 1820 - 1830	Miller 1991
Colored Transfer Print (other than blue)	Ca. 1829 - 1850	Miller 1991
Shell Edge	Ca. 1820 - 1890	Miller 1991
Green Shell Edge	Ca. 1820 - 1840	Miller 1991
Flow Blue	Ca. 1840 - 1860	Miller 1991
Annular	Ca. 1820 - 1890	South 1977
Mocha	Ca. 1820 - 1890	South 1977
Sponge	Ca. 1840 - 1920	Miller 1991
	Ironstone	
Plain	Ca. 1830 - 1900	Godden 1964
Molded	Ca. 1840 - 1900	Praetzellis 1980
	Porcelaneous Stoneware	
Plain	Post ca. 1880	Goodwin et al. 1984
	Porcelain	
English Soft Paste Porcelain (Bone China)	1794 - present	Miller 1991 Goodwin et al. 1984
	Yellowware	
Plain	Ca. 1830 - 1900	Ramsay 1947
Annular	Ca. 1840 - 1900	Ramsay 1947
Rockingham	Ca. 1830 - 1900	Ramsay 1947
Brownware	Ca. 1840 - 1900	Ramsay 1947
	Pearlware	
Washington pattern and impressed mark "WOOD" on back	1784 - 1790	Cushion 1976
Adams - Lion's pattern	Ca. 1795 - 1840	Coysh and Henrywood 1982
Printed mark "DAVENPORT"	1815 - 1860	Cushion 1976
Impressed mark "CLEWS WARRANTED STAFFORDSHIRE" in circle around crown	1818 - 1834	Kovel and Kovel 1986
Impressed mark "PHILLIPS LONGPORT" around overhand knot	1834 - 1848	Cushion 1976
	Whiteware	
Impressed mark "DAVENPORT" around anchor	Ca. 1800 - 1860	Kovel and Kovel 1986
Lombardy pattern and printed mark "Lombardy" (script) with "J. Heath & Co. below on back	1828 - 1841	Godden 1964
Richard Jordan pattern and printed umbrella-like mark "The Residence of the late RICHARD JORDAN New Jersey" with "J. H. & Co." below	Ca. 1836	Larsen 1975
Asiatic Pheasant pattern	Ca. 1850 - 1910	Coysh & Henrywood 1982
Printed mark "CLEMENTSON BROTHERS ROYAL PATENT STONE WARE" in circle with eagle perched on top	1870 +	Kovel and Kovel 1986
Printed mark "BRIDGWOOD & SON PORCELAIN OPAQUE" around shield	1885 +	Kovel and Kovel 1986
Printed mark for E. Swasey & Co., Portland, Maine	1886 - ca. 1891	Kovel and Kovel 1986
Impressed mark "GOODWIN'S HOTEL CHINA"	1893 - ca. 1906	Kovel and Kovel 1986
	Ironstone	
Printed mark of double shield from joint US and England marketing arrangement	Ca. 1853 - ca. 1937	Kovel and Kovel 1986
Printed mark "J. & G. MEAKIN, HANLEY, ENGLAND, IRONSTONE CHINA" around British coat of arms	Ca. 1890 +	Kovel and Kovel 1986
	Stoneware	
Brown stoneware ale bottle	Ca. 1820 - 1900	South 1977

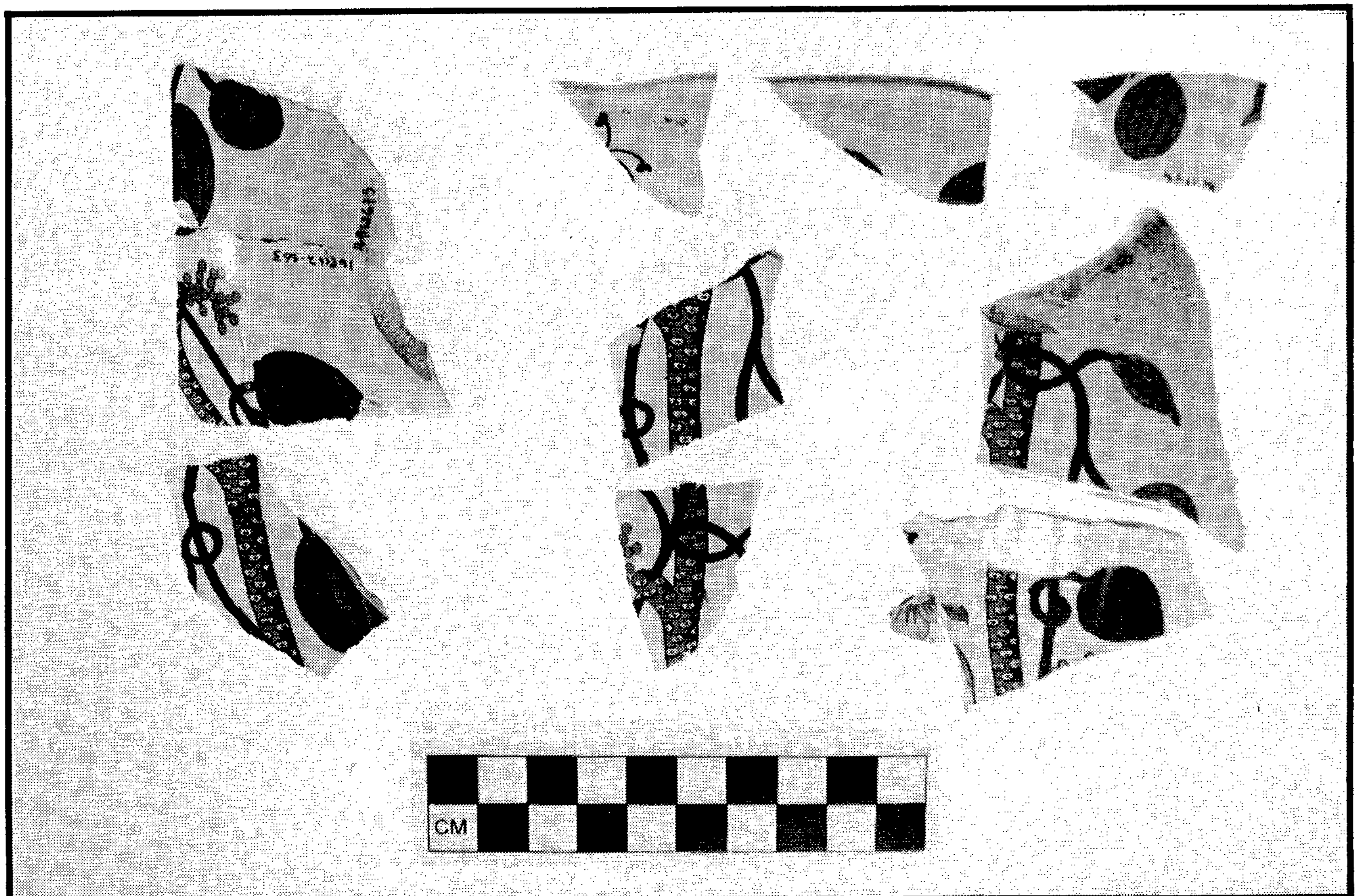


Figure 27. Selected brown transfer-printed whiteware sherds with polychrome underglaze hand painting (Vessel No. 964).

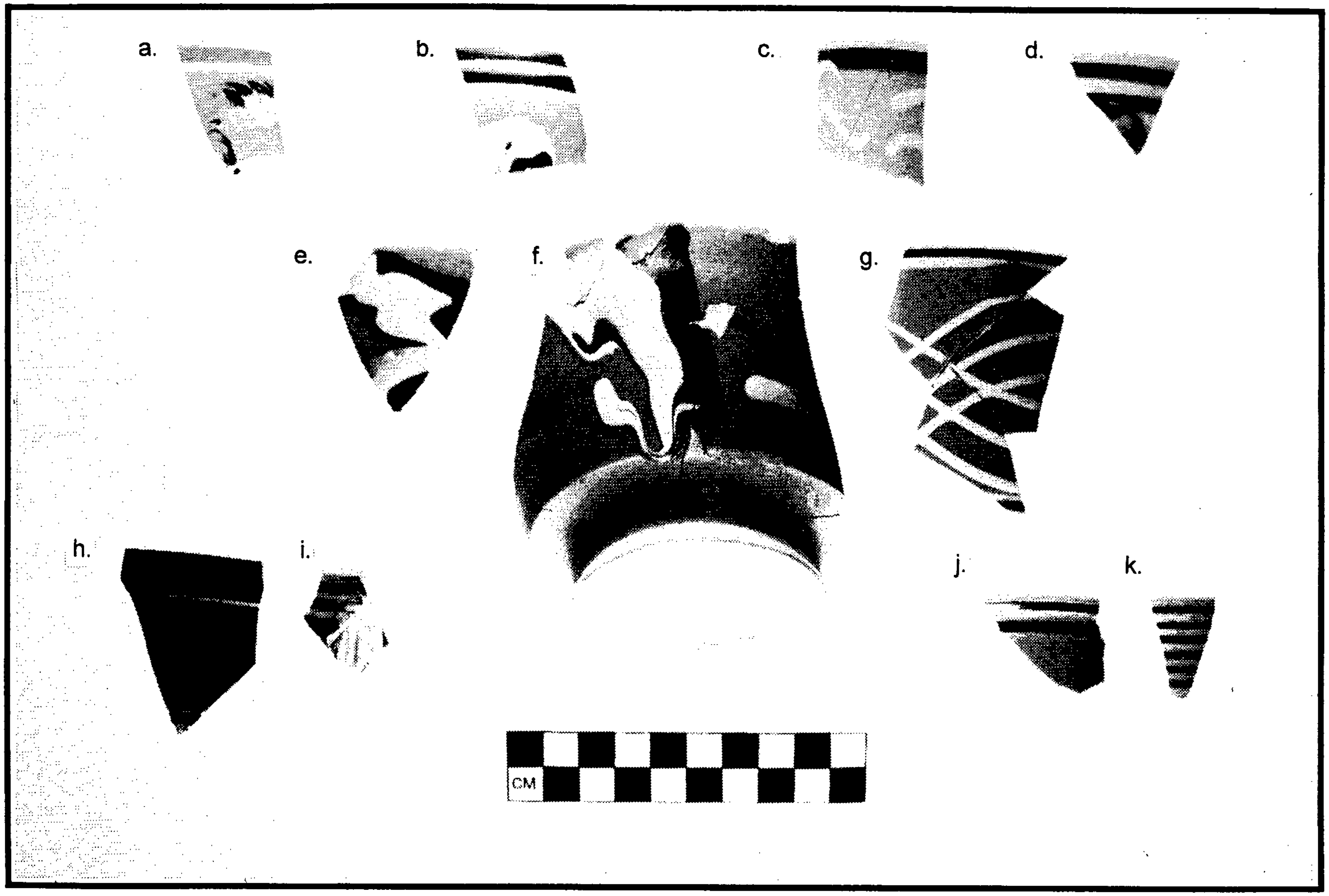


Figure 28. Selected slip decorated whiteware vessel sherds: (a, b, d) polychrome finger painting with annular border (Vessel No. 1343, 710, 689); (c) white combed trailing (Vessel No. 687); (e, f) partially reconstructed bowl with variation of polychrome finger painting (Vessel No. 609); (g) white trailing (Vessel No. 176); (h) wide black and blue annular bands (Vessel No. 717); (i) blue and green annular bands with molded handle scar (Vessel No. 715); (j) brown annular bands above a light blue field (Vessel No. 681); (k) dark brown and blue annular bands (Vessel No. 709).

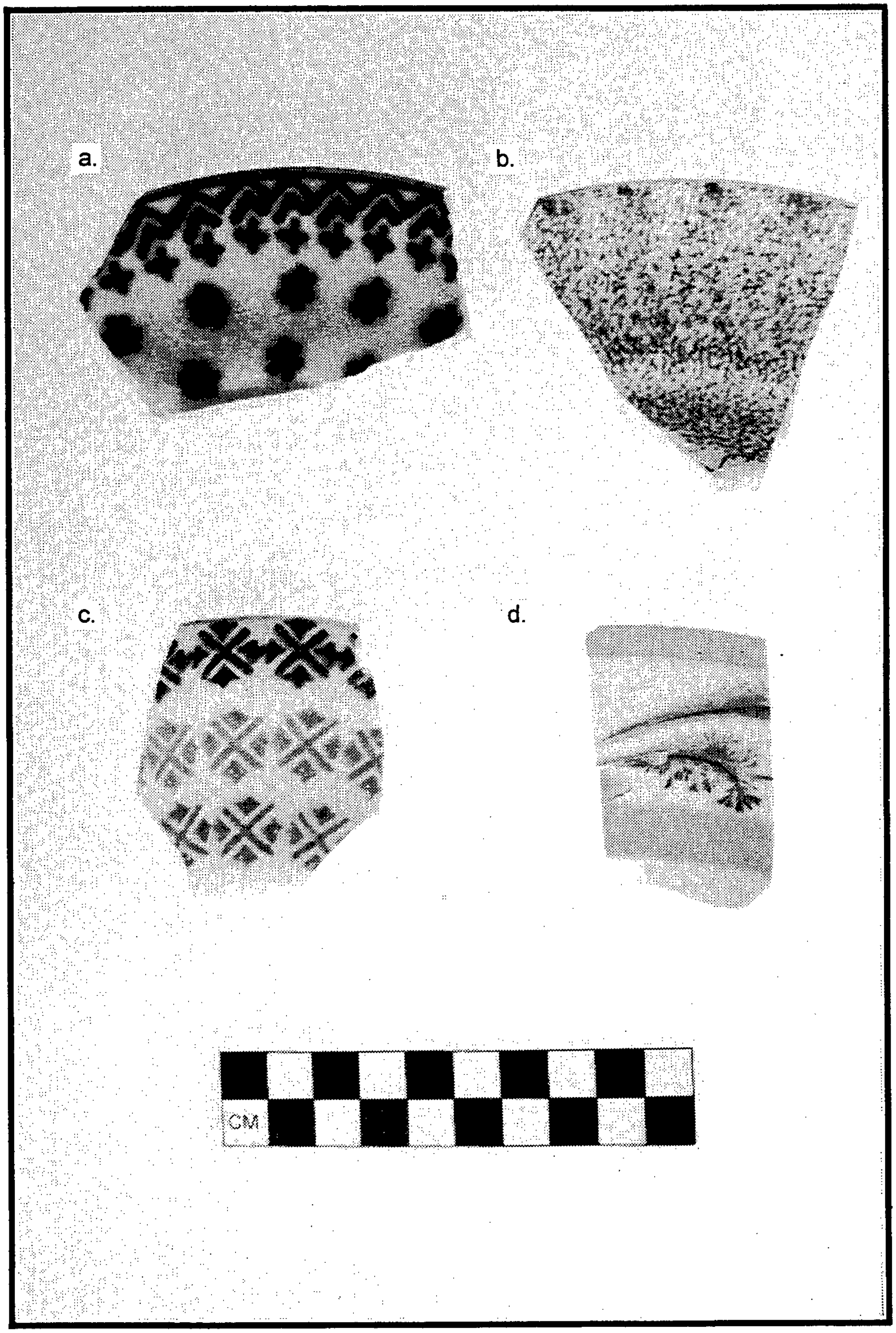


Figure 29. Selected decorated ceramic vessel sherds: (a) blue cut-sponge stamped decoration on whiteware bowl (Vessel No. 742); (b) blue sponge stamped decoration with black underglaze hand painting on whiteware bowl (Vessel No. 719); (c) polychrome cut-sponge stamped decoration on whiteware bowl (Vessel No. 744); (d) blue "mocha" decoration on yellowware bowl (Vessel No. 695).

throughout the nineteenth century. Sponge decoration often was combined with hand painting, and frequently was geometric in design. Spattered patterns achieved through the application of colored powders have been in use since the seventeenth century (Figure 29). Polychrome decal and monochrome stencil (usually gilt) were applied over the glaze, in a manner similar to enameled designs. These comprised only a small fraction of the assemblage recovered from Nina Plantation.

Yellowware. Yellowware, an American product, is considered to be a variety of earthenware, although it was made with stoneware clays; the firing temperature for yellowware vessels was not high enough to cause vitrification of the paste. Yellowware paste was slightly coarse and porous, usually characterized by a buff to brownish yellow color after firing. This usually was covered with a clear lead glaze that enhanced the yellow color of the paste. Yellowwares were manufactured between ca. 1830 and 1900 (Hahn et al. 1994:79) and typical forms included bowls, jugs, and other utilitarian holloware. The majority of the yellowware vessels recovered from Nina Plantation comprised large bowls (Figure 30).

The most common enhancements for yellowware were annular banding and mocha decoration. Rockinghamware was a variant of yellowware, characterized by its distinctive mottled brown surface, which was created by mixing manganese and iron oxides into the glaze (Goodwin et al. 1984:39; Yakubik et al. 1994:4). Rockinghamware was used for tableware and other decorative pieces.

Ironstone. Ironstone, manufactured in England from the early nineteenth century, began as a substitute for porcelain (Miller 1991:9-10), and by the 1840s, it had achieved popularity in America (Majewski and O'Brien 1987:121). This semi-vitreous ceramic was characterized by a thick, heavy body, and a by relatively fine-grained, non-porous texture. A clear to opaque glaze was applied to the vessels, and this contributed to its typical bluish-gray tint. While some of the earlier ironstone sherds were quite thick, later vessels were much thinner.

Early ironstone vessels frequently were decorated with hand painting or transfer printing, usually with Chinese motifs (Miller 1991:10). However, by mid-century, ironstone decoration was limited primarily to the simple molded form of the vessel. Most of the decorated ironstone sherds from Nina Plantation either had molded floral elements along the rim, or a simple raised, molded, marley.

Porcelaneous Stoneware. This completely vitrified ceramic was developed in the United States after 1880 (Goodwin et al. 1984:40). Porcelaneous stoneware typically had a thick, opaque, white body that was left undecorated. Decoration occasionally was used on porcelaneous stoneware, but no decorated sherds were recovered from the excavations completed at Nina Plantation.

Porcelain. Porcelain first was manufactured by the Chinese during the eighth century, but it was not until the fifteenth century that exportation to Britain began (Goodwin et al.1984:40). During the eighteenth century, European efforts to produce a similar hardpaste porcelain resulted in the development of a variety of softpaste porcelains (Majewski and O'Brien 1987:126). By the early nineteenth century, this market was dominated by Spode's bone china, first developed in 1794. Despite their availability in England throughout the nineteenth century, the majority of English porcelains on American archeological sites can be dated from the last half of the nineteenth century (Miller 1991:11).

Porcelain was characterized by a completely vitrified, translucent paste. Hardpaste porcelains had a clear, glassy glaze that rarely crazed. This feldspathic glaze was highly fused to the paste, exhibiting no clear line of separation. Hardpaste porcelain bodies were nonporous, with glass-like breakage patterns.

Soft paste porcelains, especially bone china, were fired at lower temperatures than hardpaste porcelains, which did not allow the glaze to fuse completely to the paste. Lower firing temperatures tended to leave a slight seam between the paste and the glaze. While the paste was fine-grained, the body did not break as cleanly as that of hardpaste porcelain.

Most of the decoration used on porcelains was overglaze decal, gilding, or embossing. Generally, the only underglaze decoration utilized was cobalt painting or printing, because it could retain its characteristics under the extreme heat of the glaze firing (Majewski and O'Brien 1987:128). Although the majority of the sherds recovered from Nina Plantation were plain, poly-

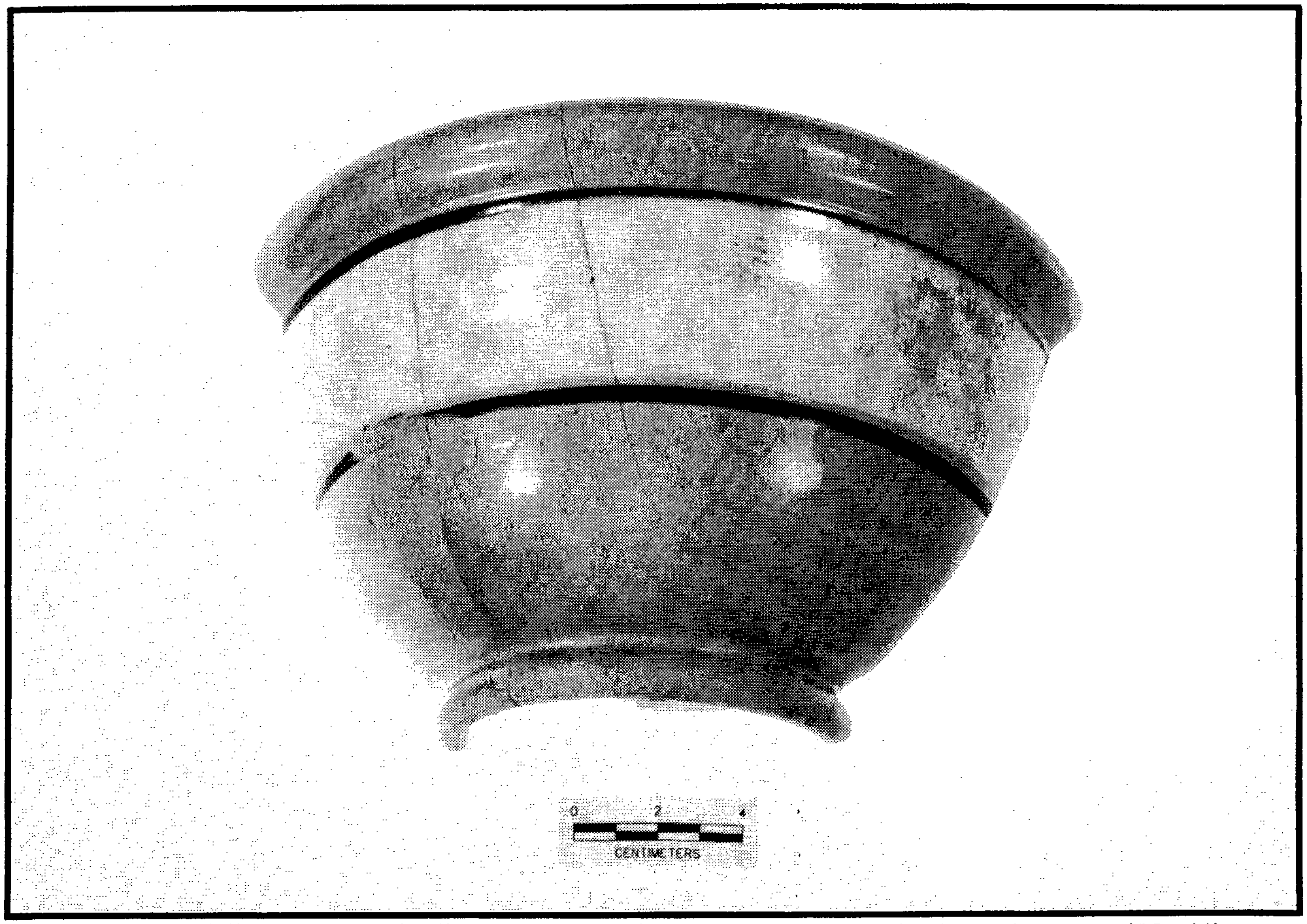


Figure 30. Partially reconstructed yellowware bowl with white and brown annular decoration (Vessel No. 11).

chrome floral overglaze decal and simple gilt banding around the rim were common at the site. Another prominent decorative motif recovered during excavation included underglaze cobalt handpainting around the rim, with a floral overglaze gilt stencil pattern applied to a softpaste body.

Tin-glazed Earthenwares. Tin-glazed earthenware vessels often are labeled as "delft" (English and Dutch), "majolica" (Spanish and Italian), and "faience" (French), depending on the presumed country of manufacture. During the analysis of materials from Nina Plantation (16PC62), the generic term was employed to avoid confusion and/or spurious attribution of origin.

Tin-glazed earthenwares were characterized by a relatively coarse, buff to light brown or pink, porous, and friable paste. The tin-oxide glaze was thick and opaque, with a tendency to separate cleanly from the body of the vessel. The vessels were glazed on both the interior and exterior, but it was characteristic for the footring to remain unglazed. The glaze often was colored by the addition of various metal oxides, including cobalt, copper, and manganese. Typical vessel forms ranged from small jars or ointment pots to plates. The jars were characterized by short cylindrical bodies, everted lips, and by shallow concave interiors; they have been referred to elsewhere as ointment jars (Goodwin et al. 1984:35), rouge pots (Hahn et al. 1994:79), or cosmetic jars (Noël Hume 1969:204). The exterior of these vessels often was tinted, while the interior remained white.

Coarse Earthenwares. Low-fired, porous earthenware vessels were manufactured both in Europe and America throughout the Colonial period. Because of the porosity of the earthenware paste, a lead or alkaline glaze commonly was applied to the interior, and sometimes to the exterior of the vessel, although some vessels were left unglazed. Most coarse earthenwares were utilitarian in function, and were hollow in form. The ease of manufacture of coarse earthenwares contributed to their widespread distribution; as a result, they are of little utility for chronological analysis, or for delimiting trade patterns.

Redware. Redware was one of the most prevalent types of coarse earthenware, with a typically red-brown, orange, or pink body, depending on the amount of iron oxide found in the clay. Like most coarse earthenwares, their widespread geographic and temporal distribution prevents their use as diagnostic temporal indicators. Lead glazes, sometimes with the addition of metal oxides for color, were common. Slip glazes and slip decoration also were used in combination with lead glazes.

Sherds from two distinctive European redware vessels were recovered during excavations at Nina Plantation (16PC62). Two of these were fragments of large storage vessels that had coarse, pinkish bodies, with a high density of iron oxide inclusions. The interiors were glazed with a thick, pale yellow lead glaze. These vessels, often termed "Provence" jars, were manufactured in the region around Biot, France from at least the fifteenth century; they have been found on Louisiana sites dating from the mid to late nineteenth century (Yakubik et al. 1994:7). The sherds recovered from Nina Plantation had the typical thick, pink body, with remnants of the yellow glaze evident on the interior.

Another European redware type represented in the assemblage from 16PC62 was Albisola Trailed, a slip decorated redware produced in Italy through the eighteenth century. The example recovered from Nina Plantation took the form of a small, shallow bowl; it had a compact, fine-grained, dark reddish-brown paste with a dark red or black, random trail of slip on the interior (Figure 31). A lead glaze had been applied to the interior of the vessel. According to Yakubik et al. (1994:6), Albisola Trailed was a product of Italian Liguria, and commonly was found on eighteenth and early nineteenth century French colonial sites.

Refined Redware. Refined redwares typically were thinner, with a compact, fine-grained paste; the paste included more refractory clays that could withstand higher firing temperatures. These vessels were frequently covered with opaque slips before glazing. These also could be colored with a variety of metal oxides.

Most of the refined redware sherds from Nina Plantation contained a lead glaze that covered an opaque slip of white, black, or polychrome annular bands. While one vessel had molded decoration, almost all of the refined redware vessels were simple, small bowls or hollow storage vessels.

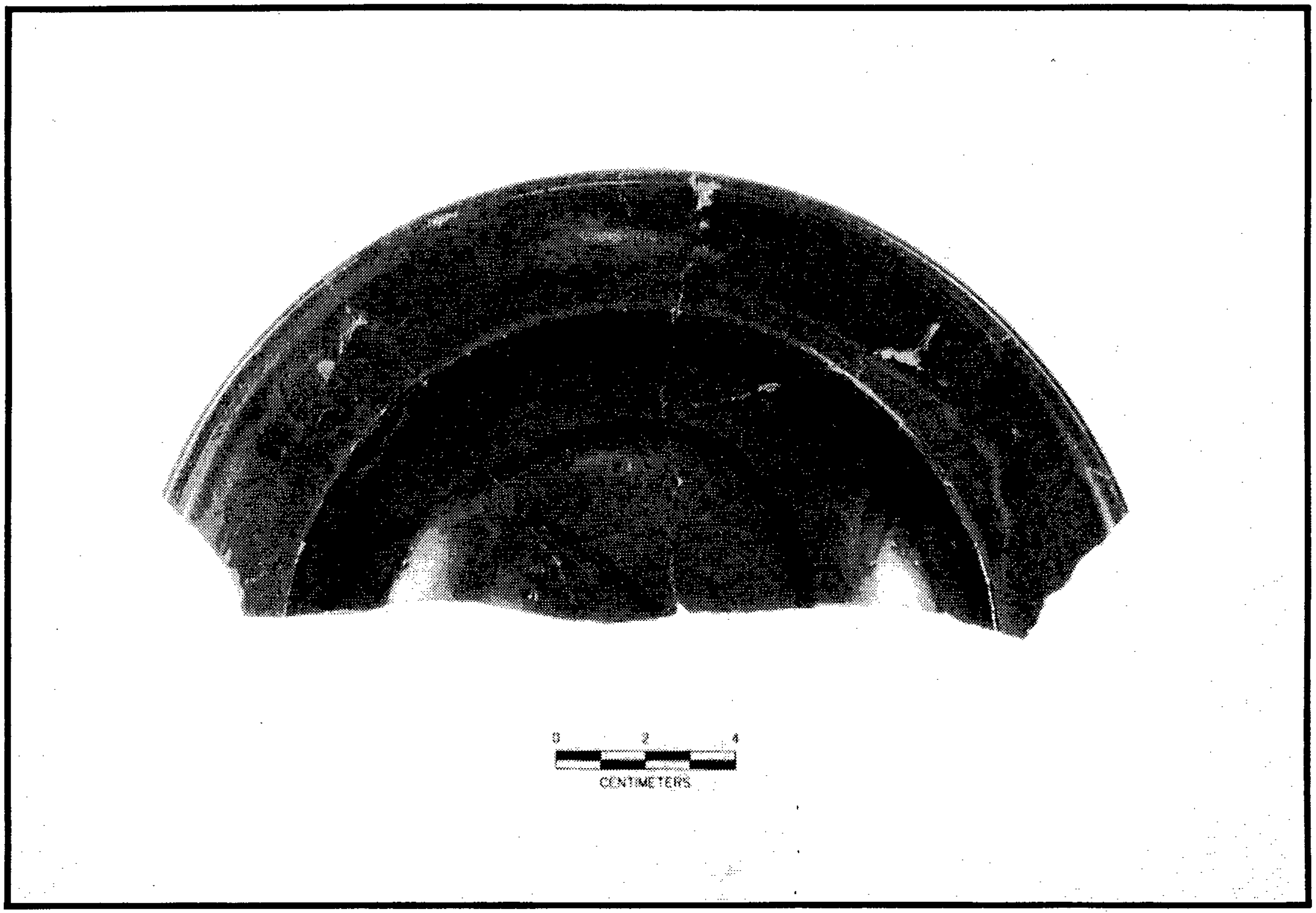


Figure 31. Partially reconstructed Albilsola Trailed redware bowl recovered from Site 16PC62 (Vessel No. 1893).

Stoneware. Stonewares are characterized by a vitrified paste with a smooth, stony texture. Colors of stoneware bodies range from gray to brown, depending on the kind and amount of impurities in the clay. The brown stonewares ranged in color from a light buff to dark brown. Stonewares first were produced in the United States ca. 1775 and became popular by the beginning of the nineteenth century (Goodwin et al. 1984:39). Stonewares were most commonly wheel-thrown utilitarian vessels that ranged in form from crocks to jars, jugs, and bottles.

Surface treatments included lead or alkaline and salt glazes. A salt glaze was created by adding salt to the kiln as the vessel was being fired; the vaporized salt adhered to the exterior of the body, giving it its characteristic orange peel texture. Frequently, the interior of the vessel was glazed with a thick, dark matte brown Albany slip. The exteriors of some stoneware vessels were embellished with blue, hand-painted decoration.

Stoneware also was used for ale bottles; these were distinctive in paste and exterior treatment. The body was buff-colored, with a yellow glaze that extended from the lip to the shoulder of the vessel. In form, the bottles had conical necks and a variety of finished lips (Figure 32). Ale bottles were popular during the second half of the nineteenth century, and they are well represented in the assemblage from Nina Plantation.

Minimum Vessel Count

In order to conduct analyses based on vessel form, and to enable application of Miller's economic scaling (Miller 1980, 1991) to the ceramic subassemblage recovered from Nina Plantation, a minimum vessel count was compiled. Economic scaling and formal analyses will be discussed in Chapter IX of this report. The minimum vessel count was undertaken after the primary ceramic analysis was completed, and required the separation of all rim sherds from the remaining ceramic subassemblage. After all rim sherds were isolated, they were sorted into categories based on the type of paste, glaze, decorative design, vessel shape, and curvature. Sherds were grouped as a single vessel either when there were direct crossmends, or when the sherds met all of the following criteria. The sherds had to share a common vessel form (e.g., bowl, plate, and bottle) and exhibit the same curvature in cross-section, the same thickness, granularity and color of paste, type and tone of glaze, and the same decorative pattern and color tone (e.g., variations in shades of purple). In a few cases, vessel numbers were assigned to non-rim sherds. In these cases, the sherds, while unique to the assemblage, were not represented by a rim sherd. To ensure that these vessels were represented in the minimum vessel count, each unique vessel was assigned a vessel number. Each identified vessel was assigned a sequential number in addition to the identifying catalog number of each sherd. Each vessel was entered into the ceramic database that included fields for vessel number, catalog number(s), paste type, glaze type, decorative type and pattern name, vessel form, rim diameter, and presumed function of the vessel. A compiled inventory of the recovered vessels can be found in Appendix II.

Glass

Glass constituted a major portion of the artifact assemblage recovered from Nina Plantation. Analysis included classification by manufacturing technique, form (including finish, base, and lip form), color, maker's marks, embossed lettering, decoration, and function. The chronology was derived from known dates of manufacture for techniques developed during the nineteenth century. Functional identification of the various glass forms was used to illuminate behavioral patterns, health concerns, and status, while the identification of maker's marks or embossers was informative for the analysis of local and regional trade. A detailed inventory of the glass recovered from the site appears in Appendix III of this report.

An important source utilized during the identification and description of glass artifacts was *The Parks Canada Glass Glossary* (Jones and Sullivan 1989). *The Bottle Book* (Fike 1987) was consulted extensively during identification of both pharmaceutical and medicinal bottles. *Bottle Makers and Their Marks* (Toulouse 1971) was used to help identify and date the large number of maker's marks recovered from the site. In addition, a number of secondary resources were referenced during the analysis.

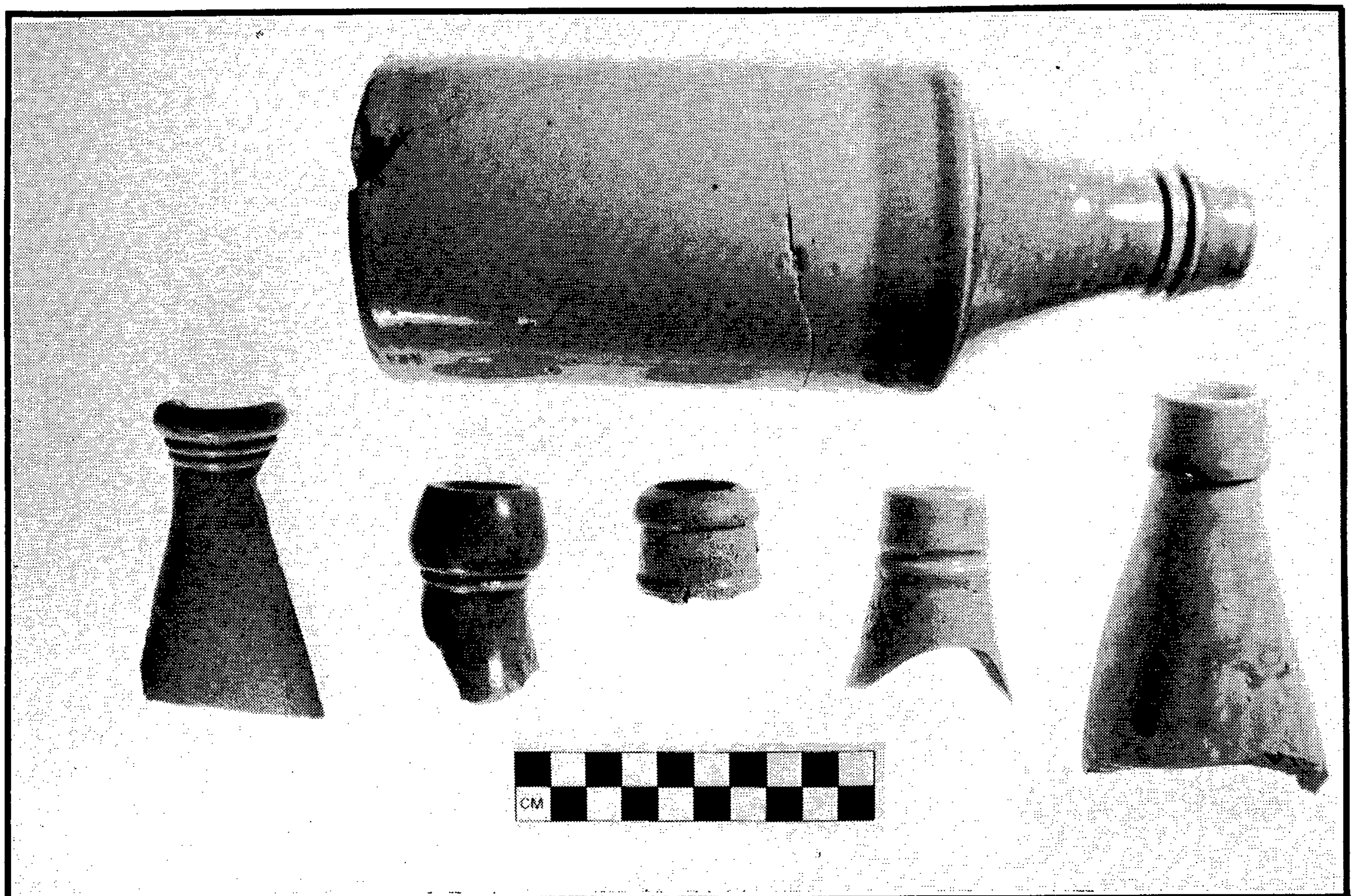


Figure 32. Selected stoneware ale bottles: (top) reconstructed bottle with down-tooled lip, v-shaped string rim and scooped shoulder (Vessel No. 298); (bottom, left to right) rounded or beaded three-ring lip (Vessel No. 47); tapered, rounded lip with small bead string rim (Vessel No. 46); rounded beveled lip with bead neck ring (Vessel No. 501); down-tooled lip with bead string rim (Vessel No. 44); down-tooled lip (Vessel No. 1388).

Color

To ensure consistency in the identification of glass color, certain colors were carefully defined. For example, "black" glass actually is a very dark olive green color that appears black in reflected light. Sometimes referred to as "English style" glass, "black" glass contains high levels of iron, manganese, carbon, and occasionally cobalt (Jones and Sullivan 1989:14). Dates of manufacture for "black" glass originate at the beginning of the seventeenth century, when English glass-houses made the transition from wood to coal furnaces. Used mainly for wine bottles, it was one of the dominant types in use until ca. 1820, when olive green colored bottles became more prominent.

The category of aqua colored glass included a wide range of near colorless glass that is characterized by a light blue to green tint. A variety of bottle types, including pharmaceuticals and mineral or soda water bottles, were manufactured from aqua colored glass.

In 1864, William Leighton created a formula to produce a clear, soda-based, lime glass that was less expensive than the previously manufactured lead glass (Goodwin et al. 1984:42). By 1875, manufacturers were adding manganese to the batch to neutralize the naturally green tint (Jones and Sullivan 1989:13). Because of the presence of the manganese oxide, this glass "solarized," or gained an amethyst tint after prolonged exposure to sunlight. By the last quarter of the nineteenth century, manganese glass dominated the market for food storage containers. Manganese glass continued in use until the events associated with World War I cut off the supply of manganese oxide in 1915 (Munsey 1970:55). A number of other clear glass objects were made using manganese glass, including bases for oil lamps and various forms of tableware.

Manufacturing Method

Because of the fragmentary nature of the majority of the glass assemblage, manufacturing method often was difficult to identify with specificity. For this purpose, bases and necks were useful as, of course, were whole or nearly whole bottles.

During the nineteenth century, major innovations occurred in glass manufacturing. Until the beginning of the nineteenth century, the majority of glass vessels were free or hand blown (Lorraine 1968). This produced an asymmetrical shape, with irregular thickness of vessel walls, and no mold seams were evident (Goodwin et al. 1984:41). The finish generally included a straight lip with a laid on string rim. The basal kick-up tended to be high, and of varied profile. In addition to free blown glass, a one piece dip mold often was used to form the body of a bottle. An example of a dip-molded bottle was the four-sided case bottle produced during the seventeenth and eighteenth centuries. Dip molds formed the body and base of the bottle at the same time, leaving the shoulder, neck, and finish to be completed by hand. This tapered mold generally left no mold seams on the body, but a bulge occasionally was located at the shoulder as a result of overblowing the mold. This technique continued in use for a variety of bottle forms produced during the eighteenth century, and probably continued into the nineteenth century (Jones and Sullivan 1989:26). A pontil was used to hold both free blown and dip-molded bottles during the finishing procedures; the pontil was attached to the base of a bottle with molten glass. When the bottle was complete, the pontil was removed, leaving a "scar" or small irregular concretion of glass on the exterior of the base. In addition to the pontil scar, dip molded bottles had walls of fairly uniform thickness, a matte finish on the exterior from contacting the mold surface, and they were hand finished.

With the advent of the three-piece hinged mold in the beginning of the nineteenth century, mold seams became a telltale sign of the method of manufacture. The first of the three-piece molds was patented in 1803 by Charles Chubsee (Dumbrell 1983:22). However, this was replaced in 1821 by the simpler Ricketts three-piece mold (Jones and Sullivan 1989:30). These three-piece molds contained a dip-mold body, with two additional pieces that formed the shoulder and neck. There usually was a plate that molded the base, but the finish had to be formed by hand with a finishing tool. Mold seams were apparent circling the body just below the shoulder, and along opposite sides of the neck, terminating just below the lip.

The finishing tool that was used to shape the lip and rim was introduced ca.1828, in British glass factories (Jones and Sullivan 1989:43). Af-

ter the body was removed from the mold, a pontil rod was attached to the base to hold the bottle while the finish was formed. The finishing tools were used to form the lip and the string rim from extra glass laid along the lip, where the blow pipe was detached. At the same time, the tool also was used to shape and size the bore. Once the lip was finished, the pontil rod was removed from the base, leaving a scar similar to those found on free-blown or dip-molded vessels.

Another type of pontil scar was formed by simply using the blow pipe itself as the pontil. This left a circular scar, and sometimes a short, tubular length of glass in the base. In the mid-nineteenth century, the snap case, which held the vessel between four padded arms, replaced the pontil rod. Bottles finished through the use of a snap case show no evidence of a pontil scar (Jones and Sullivan 1989:46).

By the middle of the nineteenth century, two other methods of bottle molding were in use; these included post bottom and cup bottom molds. These molds varied between two, three, and four piece bodies, but the method in which the base was formed was distinctive. The post bottom mold had a circular or oval plate that formed the center of the typically indented base. This frequently was embossed with a maker's mark or with the mark of the company that ordered the bottle. The segments of the body mold extended onto the base, and across the resting point of the bottle. This mold type was identifiable by the circular mold seam found around the center of the base, and by the body seams that meet the seam at the base. The cup bottom mold formed a vessel with no seams on the base. The base was formed by a mold plate with a shallow indentation or cup cut into it. This left a distinctive seam around the body of the bottle just above the base. Both of these techniques still required the use of a finishing tool to create the lip and string rim, though this usually was done while the bottle was held by a snap case.

Towards the end of the nineteenth century, molded bottles gave way to automated glass-blowers. The first semi-automatic process was developed in 1881, but was used mostly in the manufacture of fruit jars. It was not until Michael Owens patented his fully automatic bottle-making machine in 1903 that machine-made bottles became popular. Machine-made bottles contained both body and neck seams that continued onto and over the finish, which was formed as part of the mold. They also had a characteristic suction scar on the base (Jones and Sullivan 1989:38).

The finish on a bottle usually was the last part of the vessel to be formed. This included the lip, string rim, and the interior bore. Early bottle finishes were hand formed, usually by simply smoothing the cracked-off neck and by adding a laid-on string rim below it. Sometimes the lip was everted or flared, especially on pharmaceutical bottles. From the late 1820s until the beginning of the twentieth century, when machine-made bottles became common, these finishes were formed with a finishing tool that was used to shape the bore and lip, and the string rim at the same time.

In addition to those mentioned, a number of varieties of molded bottles were introduced during the nineteenth century. However, these were not present in the glass subassemblage recovered from Nina Plantation. A listing of common diagnostic characteristics, and the date range or terminus post quem (TPQ) for this material, is included in Table 8. Illustrations of a variety of recovered bottle types also are depicted (Figures 33 - 37). In addition, several selected shoulder embossures were identified on the recovered bottles (Figure 38).

Tablewares typically were made from higher quality glass. These bowls, plates, cups, and glasses usually were decorated, often by cutting or engraving. During the late seventeenth century, a process for molding glassware objects was developed; this technique was refined to allow the molding of hollowware objects during the 1820s (Jones and Sullivan 1989:34). This "pressed glass" became an inexpensive variety of tableware that still is prevalent. Unlike cut glass, pressed glass was characterized by duller edges on the faceted decoration. A wide range of decorative motifs could be used on pressed glass tablewares. Mold seams may be present unless they have been ground off. Pressing also was used on a number of non-tableware objects.

Nails

A separate Microsoft Access 2.0 database was created for the analysis of the nails recovered during excavation of Site 16PC62. The analysis focused on material, form, method and date of manufacture, size, and type. The variable "Nail

Table 8. Diagnostic Attributes of Glass Bottles and Tableware.

ATTRIBUTE	DATE	REFERENCE
Color		
Manganese solarization (amethyst Glass)	Ca. 1875 - ca. 1920	Jones and Sullivan 1989:13; Fike 1987:13
Selenium solarization (light amber or peach)	Ca. 1916 - 1930	Munsey 1970:55
Manufacture		
Pressed tableware	Late17th century	Jones and Sullivan 1989:34
Two-piece hinged mold	Ca. 1750 - ca. 1880	Jones and Sullivan 1989:27
Two-piece full-height mold	1810 - 1880	Munsey 1970:39
Three-piece hinged mold (dip body, 2-piece shoulder/neck)		
Chubsee patent	1803	Dumbrell 1983:22
Ricketts patent	1821	Jones and Sullivan 1989:30
Post-bottom mold (on 2-, 3-, & 4-piece molds)	Ca. 1850	Jones and Sullivan 1989:45
Cup-bottom mold (on 2-, 3-, & 4-piece molds)	Ca. 1850	Jones and Sullivan 1989:45
Three-piece full-height or leaf mold	Ca. 1850	Munsey 1970:39
Turn-mold or Paste-mold	1870	Jones and Sullivan 1989:31
Machine-made bottles		
Semi-automatic (Arbogast patent)	1881	Jones and Sullivan 1989:38
Automatic (Owens patent)	1903	Jones and Sullivan 1989:38
Finish		
Finishing tool	1820s	Jones and Sullivan 1989:43
Internal thread	1840s	Jones and Sullivan 1989:80
External thread	Mid 1850s	Jones and Sullivan 1989:81
Groove-ring wax sealer (fruit jar)	Ca. 1850	Toulouse 1969:112
Codd's ball stopper		
English patent	1860	Lorrain 1968:44
US patent	1873	Lorrain 1968:44
Lightning stopper		
Bottle	1875	Toulouse 1969:126
Fruit jar	1877	Toulouse 1969:126
Hutchinson Stopper	1879	Jones and Sullivan 1989:162
Patent lip	Ca. 1880	Jones and Sullivan 1989:81
Davis-type lip (patent & proprietary medicine bottles)	Ca. 1880	Jones and Sullivan 1989:79
Crown finish and cap	1892	Jones and Sullivan 1989:163
Base		
Snap case (hand-finished lip and no pontil scar)	1849	Jones and Sullivan 1989:46
Decoration		
Engraving	Late 16th century	Jones and Sullivan 1989:56
Embossed lettering (began with hinged molding)	Ca. 1750	Jones and Sullivan 1989:28
Applied color label (ACL)	1934	Jones and Sullivan 1989:76
Form		
Plate glass & mirror process	Late 18th century	Jones and Sullivan 1989:171
Lea & Perrins Worcestershire Sauce	Ca. 1830 - 1920	Switzer 1974:79
"A B C Co" on base	Ca. 1830 - 1877	Switzer 1974:79
"J D S" on base	1877 - 1920	Switzer 1974:79
Electrical insulator (with invention of telegraph)	1832	Shroeder 1971:5
Fruit jars (typical wide mouth)	Ca. 1850	Toulouse 1969:112
Glass lid liner (Boyd's) (fruit jars)	1869	Toulouse 1969:135
Light bulb (Edison's)	1879	Jones and Sullivan 1989:31
Milk bottle (round)	Ca. 1880	Klamkin 1971
Safety glass (wired plate glass)	1880s	Jones and Sullivan 1989:172
Philadelphia Oval	Late 19th - early 20th century	Jones and Sullivan 1989:85

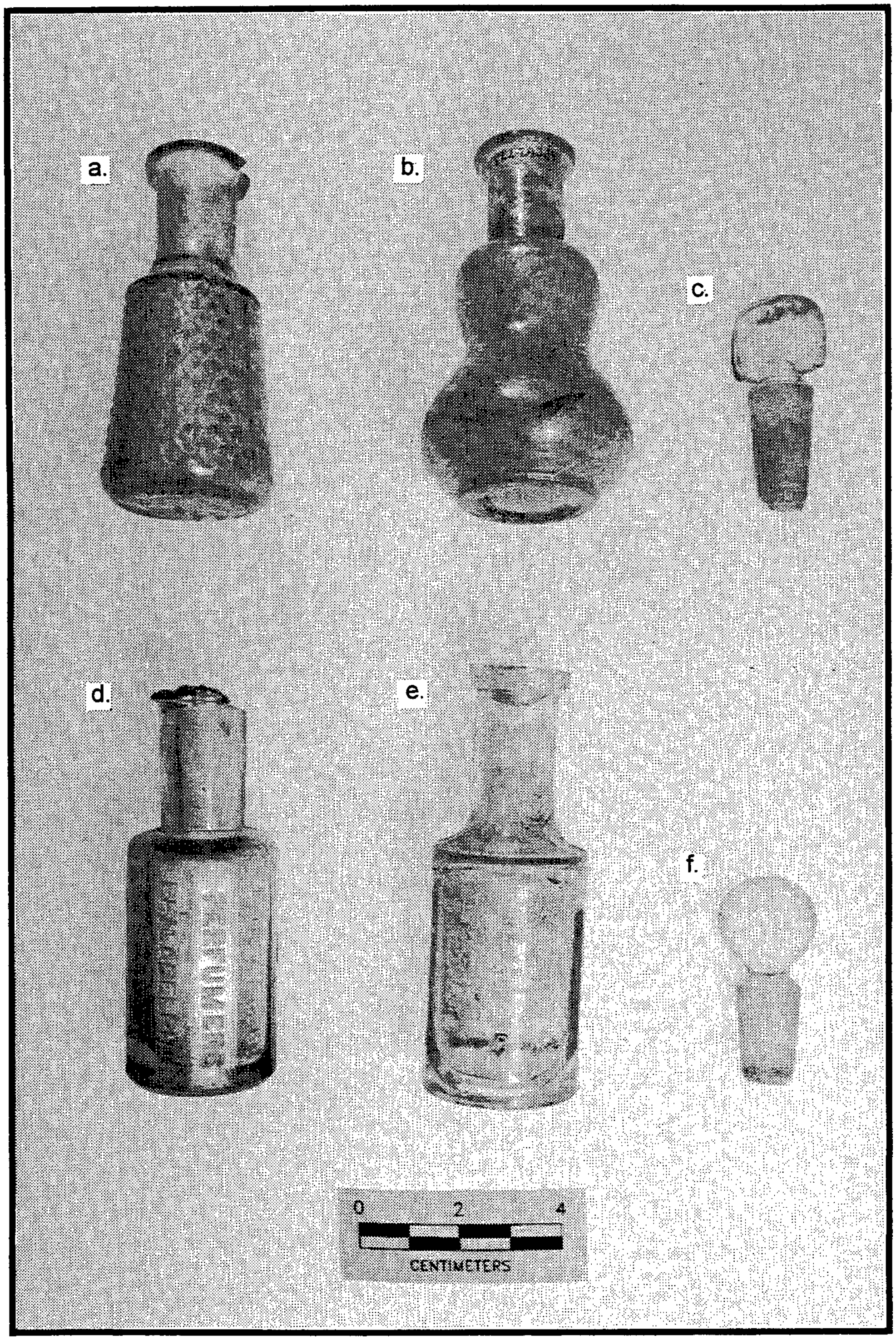


Figure 33. Selected perfume bottles and stoppers: (a) molded conical bottle with embossed decoration (FS 80); (b) blown-in-mold, waisted ovoid bottle (FS 1359); (c) rounded-square flat head stopper with ground shank (FS 1007); (d) molded cylindrical solarized amethyst glass bottle (FS 1124); (e) molded cylindrical bottle (FS 395); (f) disc stopper with ground shank (FS 443).

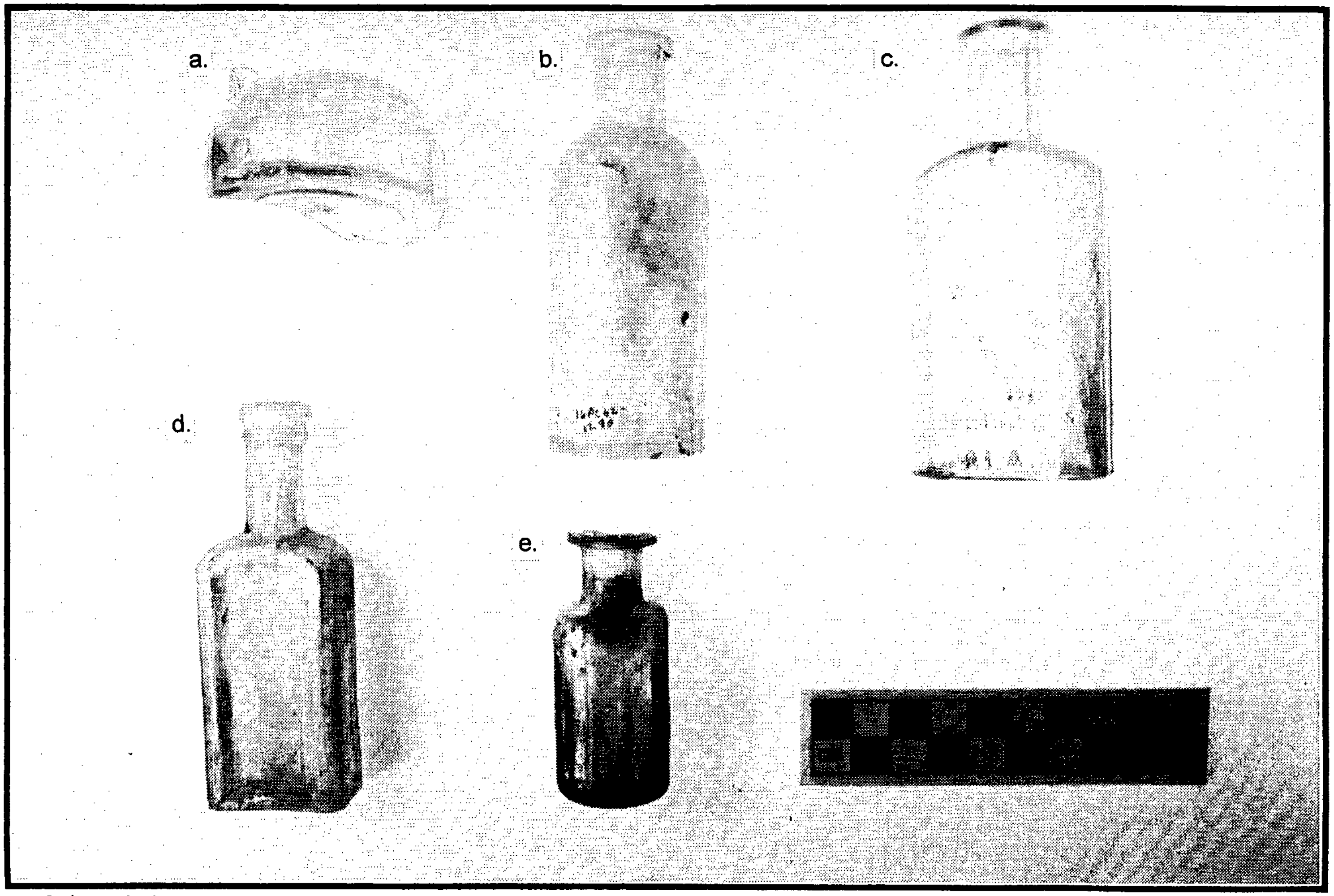


Figure 34. Selected pharmaceutical and ink bottles: (a) aqua, molded ink well (FS 1250); (b) aqua, molded cylindrical bottle (FS 269); (c) molded bottle (FS 255); (d) aqua, molded bottle (FS 1328); (e) molded bottle with two flat sides and two curved sides with molded fluting (note portion of cork still in bottle) (FS 1399).

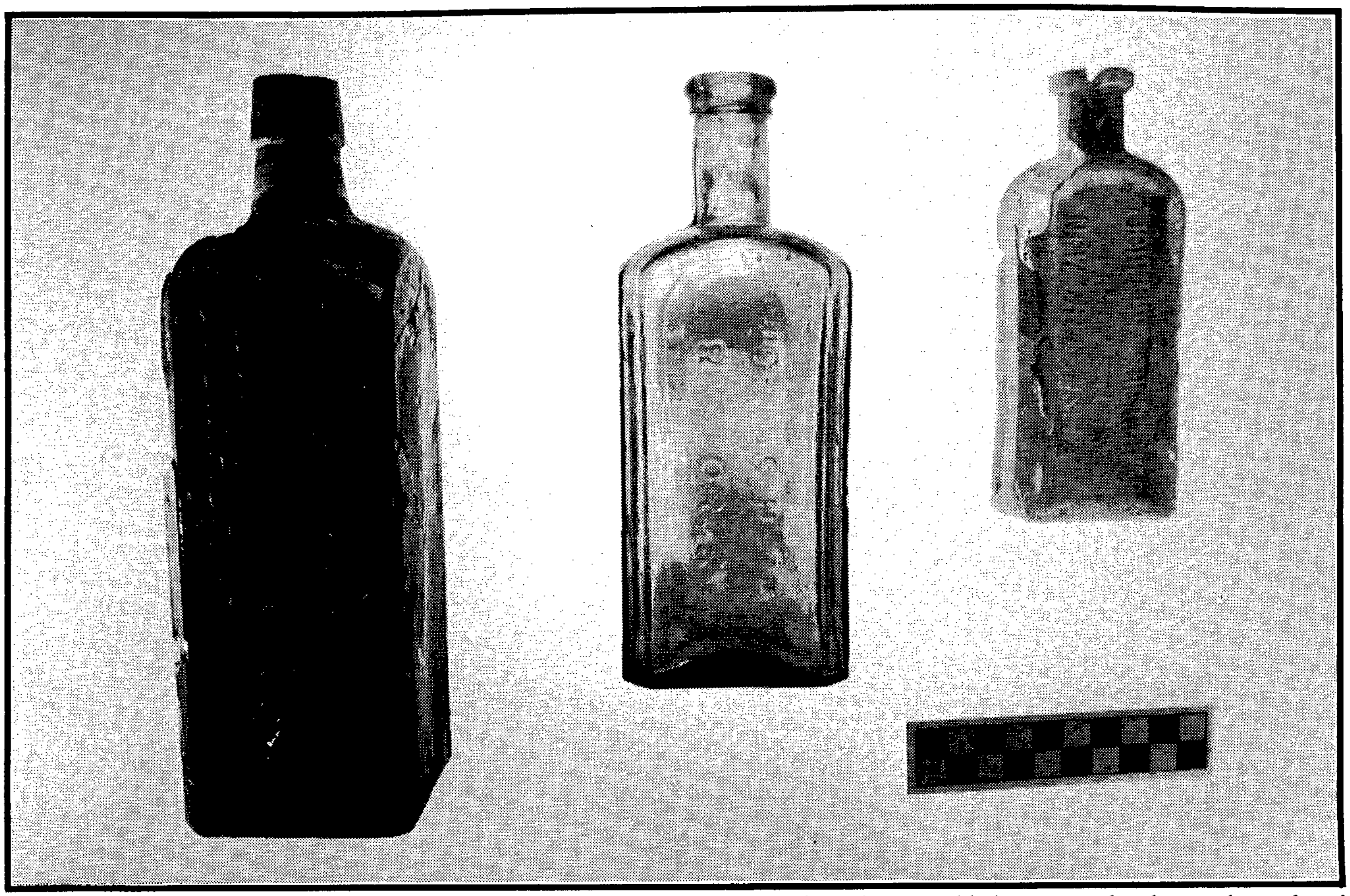


Figure 35. Selected embossed bottles: (left to right) partially reconstructed amber, molded square bottle, embossed with "DR. J. HOSTETTER'S"/"STOMACH BITTERS" (FS 1140); orange, molded rectangular bottle, embossed with "WORLDS HAIR"/"RESTORER"/"MRS. S. A. ALLEN'S" (FS 1131); aqua, molded rectangular bottle, embossed with "DR. G. H. TICHENOR'S ANTISEPTIC REFRIGERANT"/"TICHENOR & SHERROUSE"/"PROPRIETORS"/"NEW ORLEANS, LA." (FS 276).

Figure 36. Selected cylindrical bottles: (left to right) dark amber, molded cylindrical bottle (FS 1138); amber, molded cylindrical bottle (FS 1140); olive green, molded cylindrical bottle (FS 325).

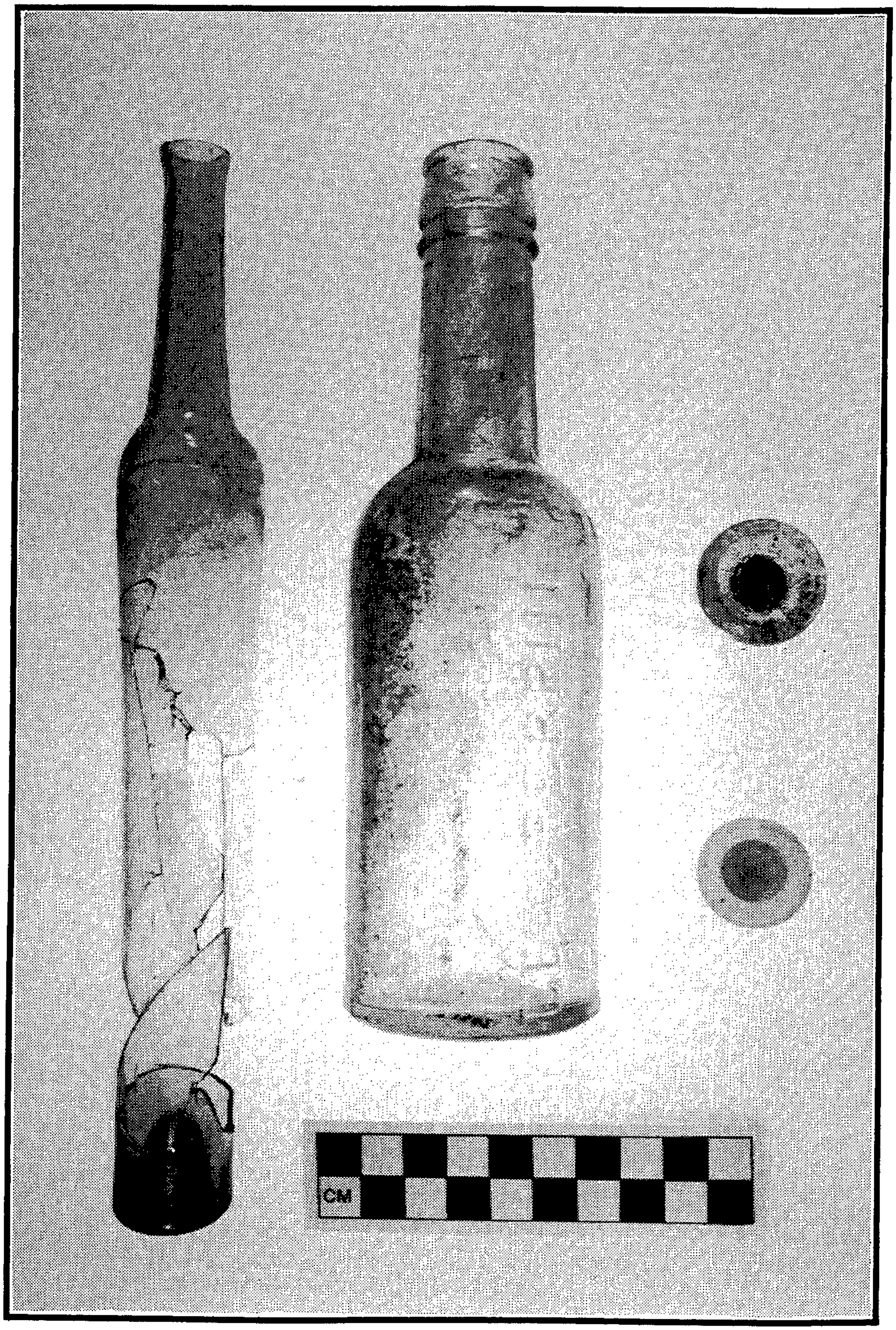


Figure 37. Selected culinary bottles and stoppers: (left to right) partially reconstructed light blue olive oil bottle (FS 507); aqua, molded Worcestershire sauce bottle (FS 313); (right, top and bottom) glass bottle stoppers (FS 1165, 313).

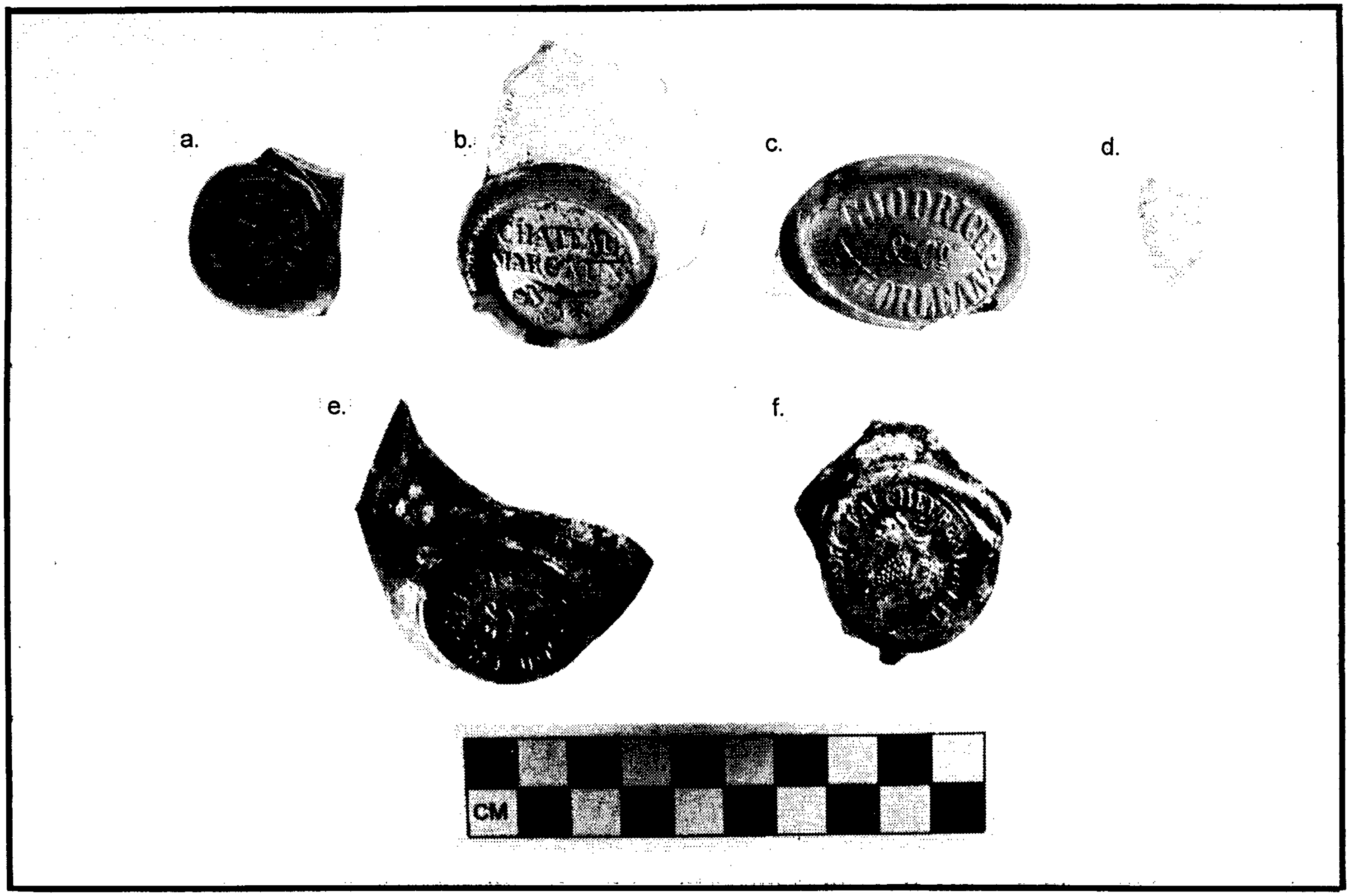


Figure 38. Shoulder seals from glass bottles: (a) embossed lettering around edge "...KD...BAUDEAU...A PARIS" with rooster and tree in center (FS 1760); (b) embossed lettering "CHATEAU"/"MARGAUX" above branch, two leaves, and a grape cluster (FS 1585); (c) oval seal, embossed with "GOODRICH"/"& CO"/"NEW ORLEANS" (FS 1823); (d) thin rays radiating from embossed lettering "ST EM..." at center of seal; (e) embossed lettering around edge ". ST ESTEPHE . MEDOC" with grape leaf in center (FS 1490); (f) embossed with rope border and lettering "FAUCHEY . PERE & FILS" around top and "A BORDEAUX" around bottom with two leaves and a grape cluster in center (FS 1486).

Type" was based on types defined previously in the volume *Historic Louisiana Nails: Aids to the Dating of Old Buildings* (Edwards and Wells 1993). Whole nails were defined as those with a head, or a finished end. These were separated from the nail fragments, and were sorted by size and manufacturing method. The majority of the nails were too badly fragmented or corroded to be diagnostic, but those that were well preserved were identified by type.

Typically, nails were made from steel or iron; however, they occasionally were fashioned from copper. Using Edwards and Wells' (1993) criteria, several nail forms were identified; these included sprigs, brads, common nails, and spikes. Sprigs were small, headless nails used for finishings on furniture or architecture. Brads, also generally used for finishing, were headless or had a small L-shaped projection instead of a head. Both sprigs and brads were unusual at Nina Plantation. "Common" nails consisted of all other headed nails measuring less than 6 in (15.24 cm). Spikes were common; these headed nails measured greater than 6 in (15.24 cm) in length.

The size categories used in the analysis were 0 to 1 in (0 to 2.54 cm), 1 to 2 in (2.54 to 5.08 cm), 2 to 4 in (5.08 to 10.16 cm), 4 to 6 in (10.16 to 15.24 cm), and 6 to 10 in (15.24 to 25.4 cm). English measurement was used during the nail analysis to correlate better the analytical and manufactured sizes.

A potential correlation between length and function was drawn based on work previously completed at Ashland-Belle Helene Plantation (Orser et al. 1987:560-561; cf. Yakubik et al. 1994:69). There is some degree of overlap between length and function (i.e., the nail used for a specific task was not always limited to one size). Nails 0 to 1 in (0 to 2.54 cm) in length may have been used for interior finishing and ornamenting. Nails 1 to 2 in (2.54 to 5.08 cm) in length were used for light framing and flooring, while 2 to 4 in (5.08 to 10.16 cm) long nails were used for boarding and heavy framing. Four to 6 in (10.16 to 15.24 cm) nails were for partition studding, rafters, and for heavy framing. However, function probably was not limited to the above mentioned tasks.

Manufacturing methods included forging, cutting, and drawing. Hand shaped forged or wrought nails were popular between the 1730s and the 1820s (Edwards and Wells 1993:2, 45). The transition from wrought nails to cut nails took place between 1790 and 1830, though there was some overlap in popularity (Nelson 1968). Cut nails were produced in several varieties by cutting flat iron sheets into nail blanks. These nails were common during the late eighteenth through mid-nineteenth centuries. Wire nails, manufactured by drawing out an iron wire, were circular in form; they appeared after 1850, and by the end of the nineteenth century they had become more popular than cut nails.

Several diagnostic features were used to identify and date the few nails that were suitable for type analysis. These included surface texture; shape of the shaft (taper and cross-section); shape of the neck, head, and point; and morphology of the nail burr (a thin ridge running along one or several edges of the nail). The material from which the nail was manufactured, typically iron or steel, and other markings such as cold-shuts (creases or rifts in the metal) on hand-wrought nails, and cut-face cracking on cut nails, also were useful during identification (Edwards and Wells 1993:26-43).

Also noted in the analysis was whether or not the nail was clinched. A clinched nail was hammered through the wood and then bent over so that the point could be hammered back into the wood or bent over flat, preventing the nail from working loose. Clinching often was used when moveable parts, such as doors and shutters, were being attached. Wrought nails often were used in construction activities that required clinching, because the soft iron from which they were forged did not break when bent (Edwards and Wells 1993:3).

<u>Beads</u>

Only 36 glass beads were recovered from the excavations at Nina Plantation (Figure 39); they are itemized in Appendix IV of this report. Bead analysis relied on previously defined attributes and classifications established for glass trade beads (Sprague 1991). Attributes included in the analysis were material, manufacturing method, style, shape, color, light (opacity), luster, and bead and bore dimensions. The primary distinctions between beads were the material and the method of manufacture. All of the beads recovered from Nina Plantation were made of glass,

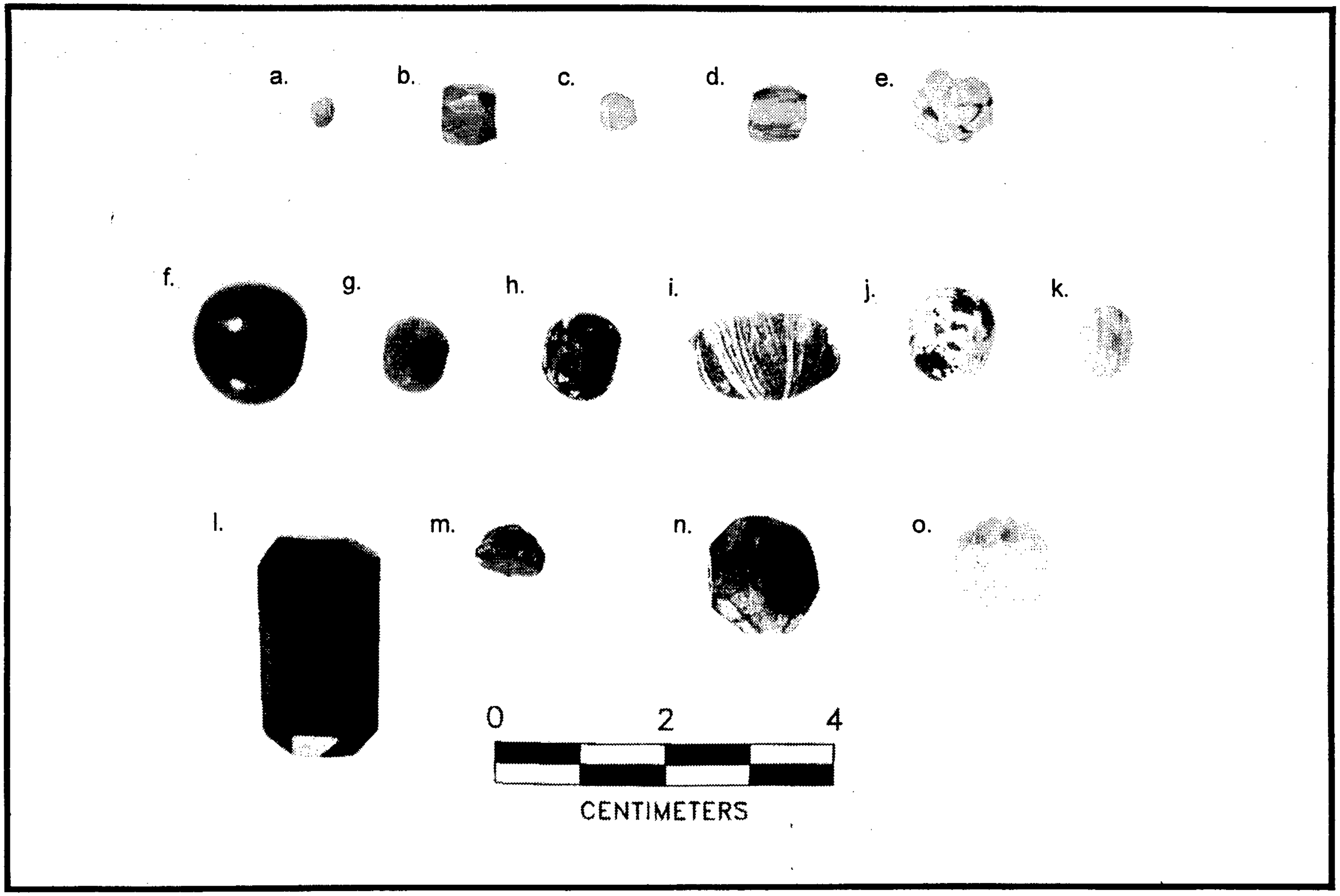


Figure 39. Selected glass beads: (note perforation axis from left to right on all beads) (a) drawn seed bead (FS 1293); (b) drawn faceted bead (FS 1692); (c) drawn faceted bead (FS 1315); (d) drawn faceted bead (FS 999); (e) drawn melon-style bead (FS 1763); (f) wound bead (FS 1347); (g) wound bead (FS 770); (h) wound bead (FS 1441); (i) ovoid wound bead (FS 1372); (j) wound bead (FS 1515); (k) wound bead (FS 1526); (l) molded, faceted spacer bead (FS 206); (m) molded, faceted hemispherical bead with flat back (FS 1782); (n) molded, faceted bead (FS 180); (o) molded, faceted bead (FS 1027).

and were manufactured either by drawing, winding, or molding. These methods are reviewed below.

Drawn beads were manufactured by blowing air into a gather of glass and stretching it into a long tube that was then cut to the desired size. This method often resulted in striations and elongated air bubbles running parallel to the long axis of the bead. Wound, or wire wound, beads were formed by wrapping a heated cane or rod of glass around a wire that created the perforation or bore of the bead. Wound beads usually had visible striations and air bubbles perpendicular to the long axis of the bead. Mold-pressed beads were made by clamping two halves of a mold around a gather of glass. A wire was inserted to form the perforation. This method created a seam that ran either parallel to or across the axis of the bead. However, on the more expensive molded beads, sanding and polishing removed evidence of the seam. In addition to a seam, most molded beads had distinctive conical or tapered perforations (Sprague 1991:150).

The weathered and patinated state of the beads recovered from Nina Plantation aided in the identification of the manufacturing method by accenting any striations present on the surface. However, this weathering also affected the beads' original luster. The recovered beads ranged in color from black (n=11), blue (n=9), green (n=5), and yellow (n=4), to clear (n=4) and amethyst or lavender (n=2); one bead was too deteriorated to allow determination of its original color. The most common decorative element on recovered beads was either cut faceting on the drawn beads, or molded faceting on the molded beads. The majority of the recovered beads (n=20) were undecorated.

Buttons

A variety of sources were utilized during analysis of buttons recovered from Nina Plantation. *The Big Book of Buttons* (Hughes and Lester 1981) was consulted for information about construction techniques, shank types, and dates, and this reference was especially useful during classification of both metal and glass buttons. Hinks (1995) provided additional data on manufacturing techniques, dates, and functions associated with eighteenth and nineteenth century buttons. Lamm et al. (1970) discussed manufacturing methods, functions, and classification of porcelain buttons, as well as discussions of various ceramic button patents. Additional button patents were discussed by Prosser (1970). Kelso (1971) prepared a classification of shell buttons. Albert (1976) presented a thorough classification of United States military buttons dating from the Revolutionary War through the mid-twentieth century.

Several archeological sources also were examined. Olsen (1963) and South (1964) provide two of the seminal studies pertaining to eighteenth and nineteenth century buttons recovered from archeological sites. Otto (1984), in his study of Cannon's Point Plantation in Georgia, used the buttons recovered from that plantation in his review of plantation status patterns. Louisiana archeological site reports reviewed for this analysis included an examination of the buttons recovered from the Greater New Orleans Bridge No. 2 right-of-way study (Thigpen 1986), and the study of Ashland-Belle Helene Plantation (16AN26) (Yakubik et al. 1994). Diagnostic attributes used in the analysis of the recovered buttons are listed in Table 9.

The majority of the buttons recovered from Nina Plantation were utilitarian porcelain buttons with two or four holes each (Figure 40). This type of button initially was manufactured by a process patented in Great Britain by Richard Prosser in 1840, and in the United States by his brother Thomas Prosser in 1841. These utilitarian buttons were made from a dry clay powder that was molded under intense pressure, and subsequently fired. By the early 1850s, similar porcelain buttons, manufactured using a moist clay process, were produced in France, primarily by the Bapterosses firm; while the manufacture of porcelain buttons continued in the United States, French buttons dominated the market between the 1850s and the early twentieth century (Albert and Adams1970:4-10; Hughes and Lester 1981:31). A distinctive characteristic was the "orange peel" appearance on the back center of porcelain buttons.

Approximately 24 percent (n=172) of the buttons recovered during excavation at Nina Plantation were manufactured from bone (Figure 40). These utilitarian buttons normally were made from cattle bone. The associated manufacturing process involved boiling the cleaned bones to soften them, at which point they were sawn open

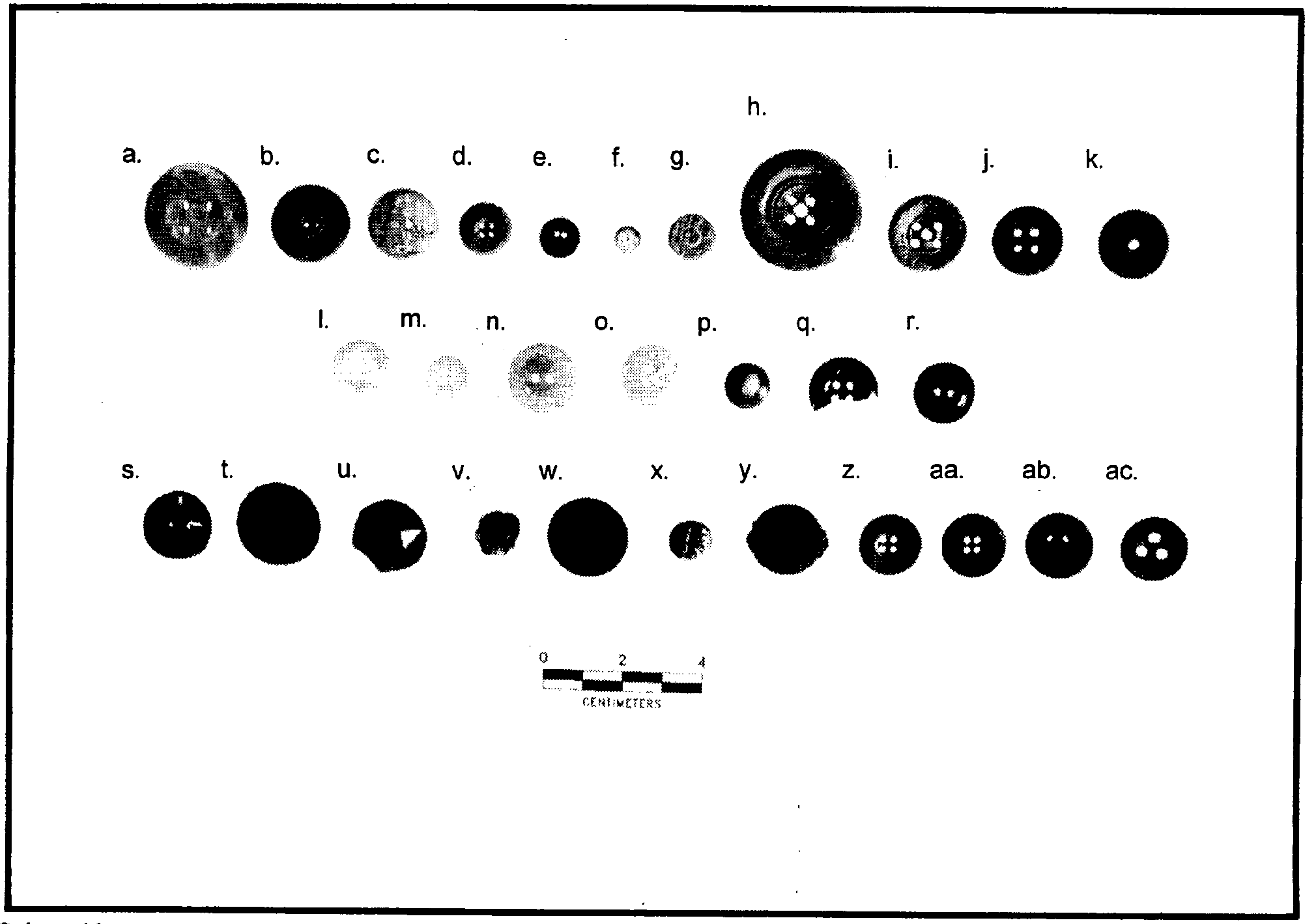


Figure 40. Selected buttons: (a - d, f) two and four hole shell buttons (FS 1340, 14, 1360, 1313, 1309); (e) incised two hole shell button (FS 1543); (g) incised shell button with swaged-in loop shank (FS 1773); (h - j) five and four hole bone buttons (FS 37, 658, 1312); (k) one hole bone disc from cloth covered button (FS 657); (l - o, q, r) two and four hole white and black porcelain buttons (FS 1312, 1312, 80, 692, 1334, 831); (p) white porcelain button with green's bulls-eye pattern and screw-in shank (FS 927); (s - u) black glass buttons (FS 1308, 438, 1196); (v) molded, translucent green glass rose button (FS 206); (w) flat copper disc button with alpha shank (FS 1336); (x) gold-plated copper button with stamped floral pattern (FS 1816); (y) iron suspender button (FS 411); (z) four hole brass button (FS 1297); (aa) four hole two-piece brass button (FS 1297); (ab, ac) embossed four and three hole brass buttons (FS 1479, 879).

Table 9. Diagnostic Button Attributes.

DIAGNOSTIC ATTRIBUTE	USE POPULARITY DATE RANGE	REFERENCE
	Metal Buttons	
"Alpha" shank on flat or domes one-piece disc buttons	Ca. 1770s - early nineteenth century	Hughes and Lester 1981:217
Stamped backmarks on flat or domes one-piece disc buttons	Ca. 1790s - 1830s	Hughes and Lester 1981:216-217
Sanders shank on stamped two or three-piece buttons	Post ca. 1815	Hughes and Lester 1981:217
Canvas pad shank, on stamped sheet iron buttons (originally cloth-covered; cloth and canvas pad shank normally deteriorated)	Post ca. 1825	Hughes and Lester 1981:70-71
	Porcelain Buttons	
Pressed/molded utilitarian buttons, normally with two to four holes	Post 1840 (common by ca. 1850s)	Albert and Adams 1970:4-7; Hughes and Lester 1981:31
Screw-in shank, on gaiter buttons	Post 1857	Lamm et al. 1970:20-25
	Glass Buttons	
Swirlback, with inserted metal loop shank	Ca. 1840 - 1870s	Hughes and Lester 1981:109
Push-in metal loop shank	Ca. 1840 - 1870s	Hughes and Lester 1981:109
Brass loop shank with shank plate	Late nineteenth and early twentieth centuries	Hughes and Lester 1981:109
	Shell Buttons	
Sweged-in shank	Post 1787	Hinks 1995:72-73; Prosser 1970:57
	Bone Buttons	
One-holed bone button discs (interior of cloth-covered buttons)	Ca. eighteenth and early nineteenth centuries	Hinks 1995:72-73, 89, 93
Utilitarian buttons with four holes drilled/lathed simultaneously with cutting of the button (no central hole; holes evenly spaced)	Post ca. 1790s	Hinks 1995:67-68; Prosser 1970:58

and flattened. After these flattened sheets of bone were dried, buttons were cut from the sheets using a lathe, or occasionally a brace and bit. Initially, these buttons had a central hole or depression, formed by the cutting tool during production. Two to four attachment holes, often irregularly spaced, were hand drilled around this central hole. In the 1790s, new technology enabled the lathing of the button and drilling of the holes to be conducted simultaneously. These buttons eventually dominated the market, although the more labor intensive hand drilled buttons continued in use during the nineteenth century (Hinks 1995:66-68; Prosser 1970:58). Of the recovered four and five hole bone buttons, only one was clearly manufactured using the newer technology; the vast majority displayed the central hole or depression characteristic of hand drilled buttons (Appendix IV).

Six bone discs with a single central hole also were recovered from Nina Plantation. While these bone discs at times have been identified as buttons, (e.g., Thigpen 1986:D-1), they were used as the core for cloth-covered buttons. Cloth covered buttons were used extensively during the eighteenth century, but lost popularity during the early nineteenth century (Hinks 1995:71-73).

Shell buttons with two or four holes also comprised part (12 percent) of the recovered button assemblage from Nina Plantation. These were cut either from ocean or freshwater shells, using techniques that changed little during the nineteenth century. Buttons that exhibited iridescence (caused by a layer of nacre) were termed pearl, while those lacking iridescence were identified as "shell" (Kelso 1971:22), although this distinction is frequently obscured by deterioration of the surface of archeological examples. There is archeological evidence placing utilitarian shell buttons in a late eighteenth century context, but they did not become widespread until the mid-nineteenth century (Claassen 1994:79-80).

Both Union and Confederate military buttons were recovered during excavation at Site 16PC62 (Figure 41). All of these were two-piece copper or brass buttons with Sanders type shanks; these looped wire shanks passed through the back of the button and provided strong attachments. The dome-shaped front was stamped with the insignia or coat of arms of the division or military branch for which they were manufactured.

Other metal buttons recovered from the excavations at Nina Plantation (16PC62) included non-military, two-piece metal buttons with Sanders type shanks; one-piece buttons with less durable "Alpha" shanks; one-piece, three-hole and four-hole buttons; and, two-piece, four-hole buttons. Most of these were made either of copper or brass; some were manufactured with iron backs. Iron buttons recovered from the site included a suspender button and one canvas pad shank cloth-covered button (Hughes and Lester 1981:70-71).

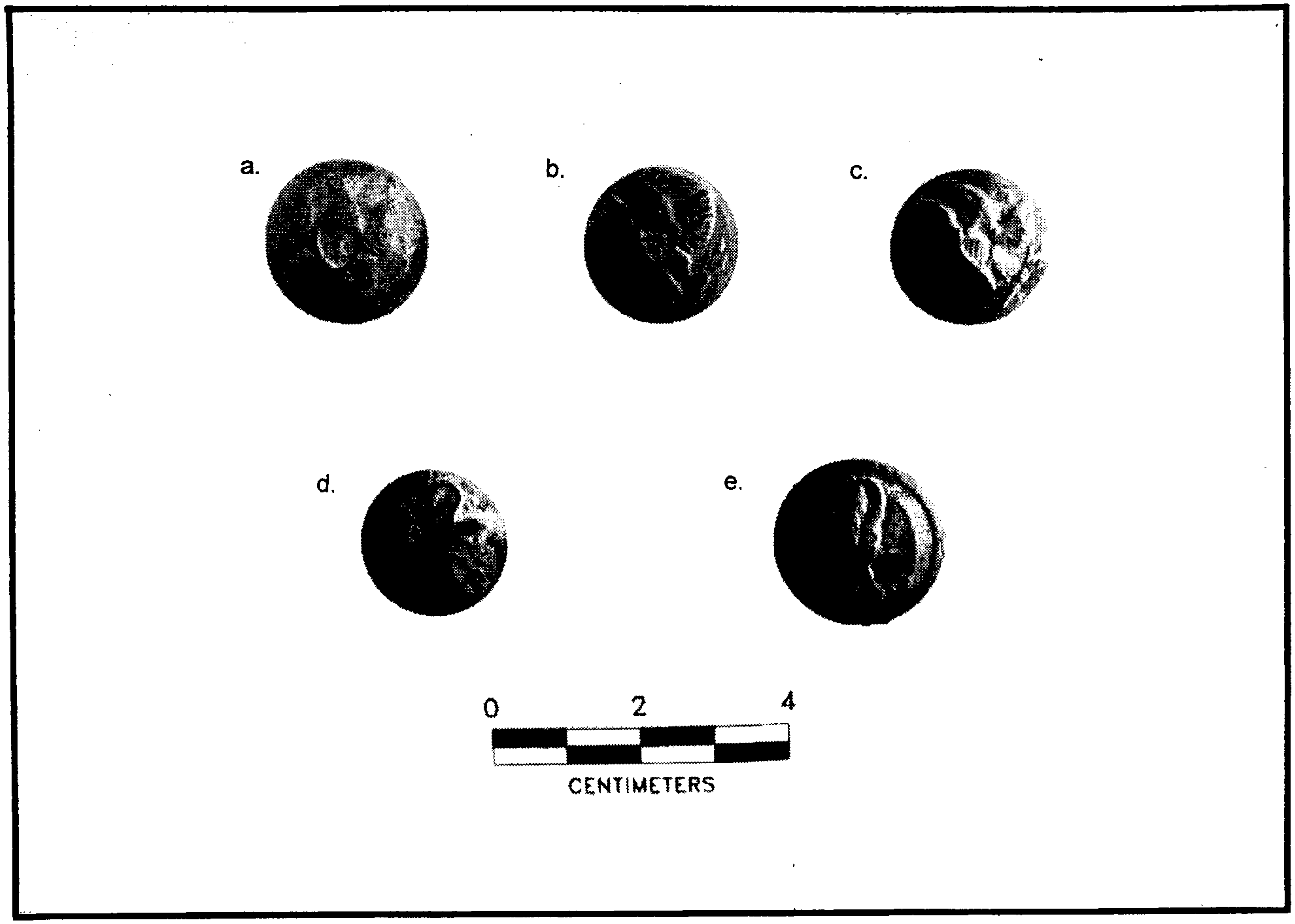


Figure 41. Selected military buttons: (a) two-piece Union Infantry officer's button (FS 1298); (b, c) two-piece Union General Service buttons (FS 1328, 1351); (d, e) two-piece Louisiana State Confederate buttons (FS 1501, 1311).

In addition, portions of unidentifiable, highly corroded, iron button backs and fronts also were collected.

A total of 14 glass buttons were recovered during excavation at Nina Plantation (Figure 40). Dominant among these were black glass buttons; these included plain discs, large faceted buttons, discs with cut decoration on the front, and one whistle form with a multi-colored glass front. Two buttons with staple shanks, each molded in the shape of a rose, also were recovered. These were hand-worked, the shanks having been added while the glass was still soft.

<u>Miscellaneous Artifacts</u>

This analysis included a wide range of materials. All metals other than nails were classified as miscellaneous artifacts. Also included were worked bone artifacts, clothing fasteners, personal items, jewelry other than beads, coins, personal items, arms and ammunition, toys, and a variety of other artifact classes. The database created for this analysis included recorded material, type, dimensions, weight (if applicable), function, and physical characteristics. Any decoration, writing, or manufacturer's marks were described and identified when possible. Specific classes of artifacts included in the miscellaneous classification are described below.

Coins

A total of six American coins, both five and ten cent denominations, were recovered from the excavations at Nina Plantation (Figure 42). The coins were analyzed and recorded by material type, monetary value, date, and decoration. Dates, often badly worn and difficult to read, were examined with the aid of a microscope using 40x magnification. *The Comprehensive Catalog & Encyclopedia of United States Coins* (Alexander 1990) was used as a reference for identifying the coins.

Of the coins recovered, one dime, one half dime, and four five cent pieces were identified. The 1887 silver dime depicted Liberty seated, with a cereal wreath located on the reverse side. The 1854 half dime also featured Liberty seated, with arrows positioned to either side of the date, and a laurel wreath stamped on the reverse. Three of the five cent pieces were minted in 1866. One side of these coins contained a "5" in the center with stars and rays extending outward; the obverse side depicted a shield, with the date printed below. The final five cent piece, dated 1876, bore the shield on one side, and the "5" and stars on the other; however, the rays were omitted (Alexander 1990:125-126, 143, 152).

Dolls

Several porcelain figurines and porcelain doll parts were recovered from Nina Plantation (Figure 43). These were made of both glazed and bisque porcelain; eyes, lips, and hair showed remnants of hand painting. The typical doll form would have had arms, legs, and head anchored to a textile body (Noël Hume 1969:316-319). Also recovered was a small, solid porcelain doll, with arms and legs intact, but missing feet and hands. Porcelain dolls and figurines were manufactured in a variety of different styles and by different companies throughout the nineteenth century. Unfortunately, too little is known about the time frame associated with technical and stylistic changes in doll production to use these attributes as an effective dating technique (Noël Hume 1969:316-319).

Marbles

Many marbles recovered from historic seventeenth, eighteenth, and nineteenth century sites in the United States arrived as imports from Germany, England, and Holland. Traditionally, marbles have been made from a variety of materials including ceramic, stone, and glass (Carskadden et al.1985:86). Stone marble production and export began in England and Holland during the seventeenth century, but by the eighteenth century, Germany dominated the market. German stone marble production peaked around 1740 and again between 1850 and the 1870s; it then waned by World War I. By 1846, Germany also was producing hand-made glass marbles; imports also were halted by World War I. Most hand-made marbles were out of production by 1920 (Randall 1971:104).

Early hand-made glass marbles usually included clear glass with spirals of different colors in the interior. Hand-made glass marbles were characterized by two pontil marks on opposite sides, and by a slightly irregular shape. The first machine-made marbles came into production in 1901; they differed from the hand-made marbles

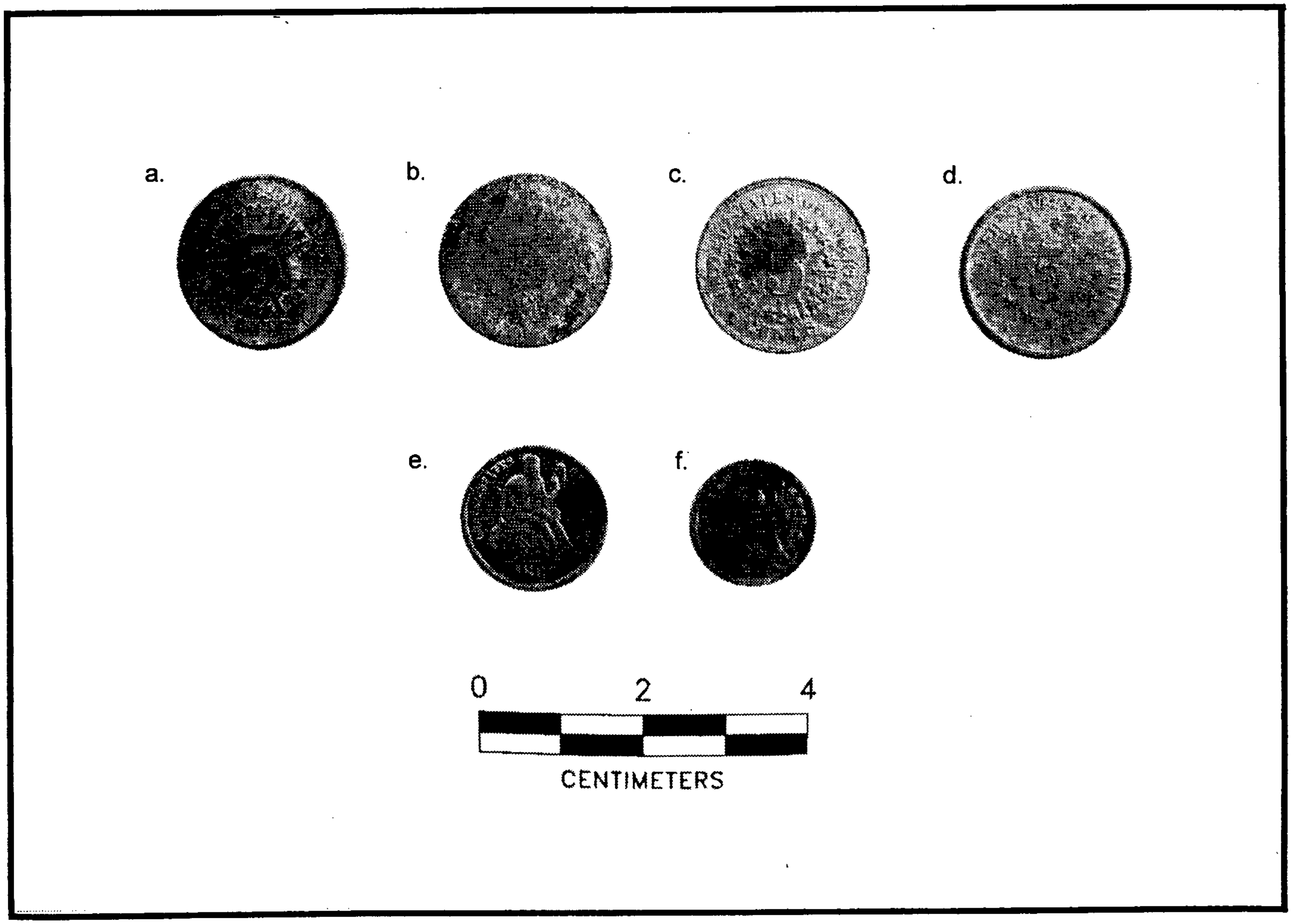


Figure 42. Coins recovered from Site 16PC62: (a - c) copper five cent pieces, "5" in center with stars and rays extending outward, a shield, with date printed below, on obverse side, minted in 1866 (FS 1298, 1298, 1322); (d) copper five cent piece, "5" in center ringed by stars, a shield, with date printed below, on obverse side, minted in 1876 (FS 1380); (e) silver dime with seated Liberty and a cereal wreath on obverse side, minted 1887 (FS 671); (f) silver half dime, seated Liberty with arrows positioned to either side of the date, laurel wreath on obverse side, minted 1854 (FS 431). No mint marks were visible.

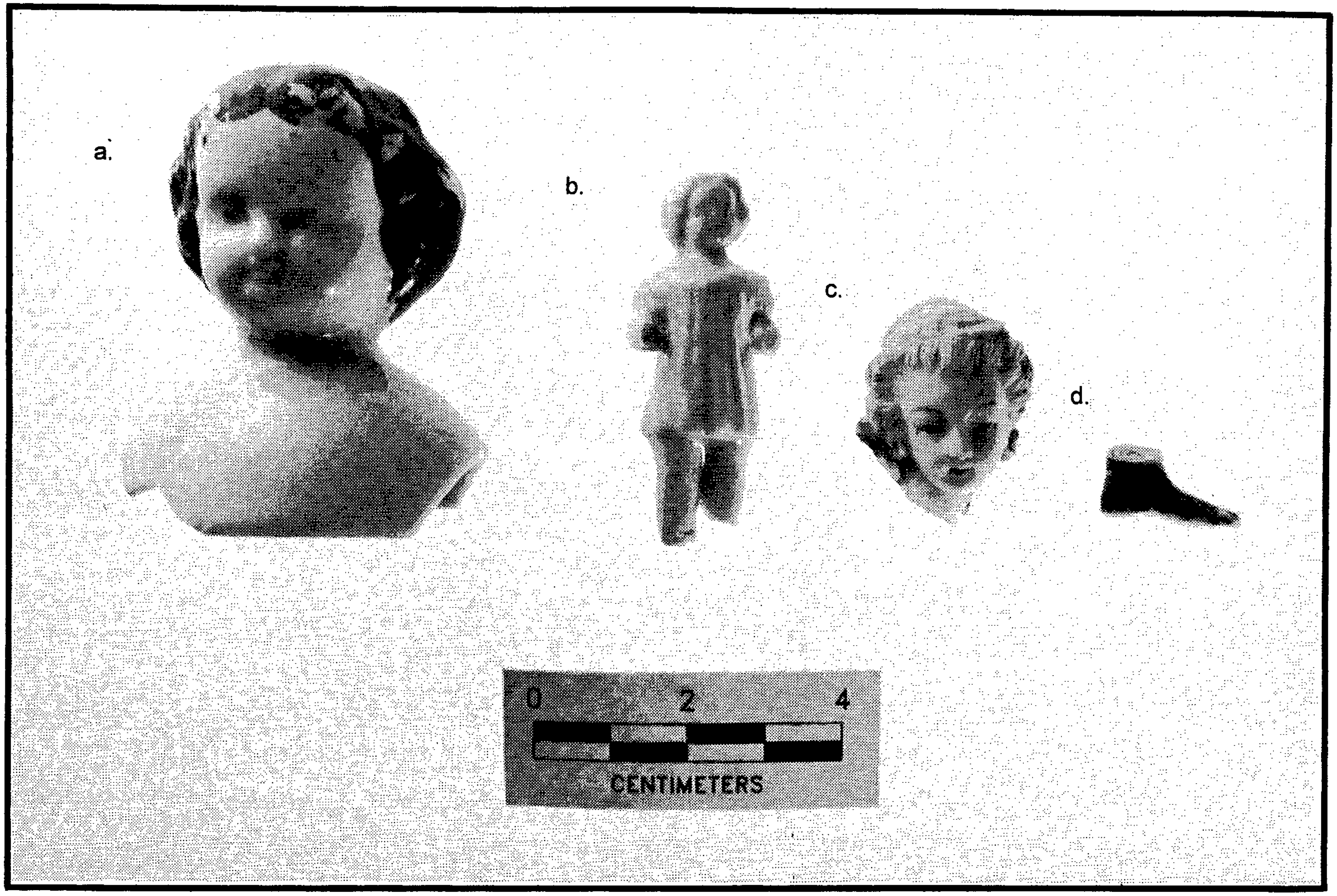


Figure 43. Selected porcelain doll and figurine parts: (a) complete hand painted doll head (FS 1308); (b) nearly complete figurine (FS 1376); (c) hand painted parian figurine head (FS 1370); (d) doll foot (FS 882).

in that they usually were opaque, and contained a single pontil mark. By 1926, machine-made marble production was fully developed; more regularly shaped marbles with no pontil marks, in a variety of colors and patterns, became the norm (Randall 1971:104-105; Carskadden et al. 1985:91-93).

Limestone marbles typically were white, gray, or brown, and they often were dyed bright colors during manufacture. Alabaster marbles, another popular European export, usually were white or pink. Due to the softness of the stone, these marbles tend to be poorly preserved in the archeological record. Other German stone marbles, made from a variety of semi-precious stones, are less common in the archeological record (Carskadden et al. 1985:91).

Attributes recorded during analysis included material and method of manufacture, diameter, color, and decoration. The majority of the 51 recovered specimens were made from earthenware, limestone, marble, glass, or porcelain (Figure 44). A detailed listing of these marbles can be found in Appendix IV.

Tobacco Pipes

A small collection of tobacco pipes was recovered during data recovery at Nina Plantation. For analytical purposes, these were divided into groups based on material and form. Two major groups were represented; the first included pipes with the bowl and stem both made from white ball clay (n=141) (Figures 45 and 46). Pipes in the other group (n=108) were manufactured from a variety of earthenware and stoneware clays, and had short stems into which a reed stem could be inserted (Figures 45 and 47). Five stem fragments manufactured of vulcanite, a type of hard rubber. These would have been used with brier pipes, although none were recovered. Other attributes noted in the analysis included glaze type, decorative elements, and mark type.

Identification and dating of the pipes was based on formal and decorative attributes, and on maker's marks, where present. Identified marks represented manufacturers in Holland, England, the United States, and France. Manufacturers of pipes were identified in England, France, Holland, and America. A statistical method for dating white ball clay pipe assemblages by measuring the diameter of the bore holes (Binford 1972) works reasonably well only for dating sites occupied through the middle of the eighteenth century. Applying the Binford/Harrington formula on the tobacco pipe subassemblage recovered from Nina Plantation (16PC62) produced a mean date of 1734, while dates derived from formal analysis grouped in the first two thirds of the nineteenth century. Sources of great utility in identification and dating were Humphrey (1969), Walker (1971 and 1983), Alexander (1990), Duco (1982), and Hansen (1971). Details of the pipe analysis are presented in Appendix IV.

Firearms and Ammunition

Only two firearms were recovered from the site; one of these was a single shot, breechloading pocket pistol (Figures 48 and 49), and the other was a barrel from a muzzle loaded pistol (Figure 48). Ammunition represented at the site included lead shot, rim fire casings, center fire casings, percussion caps, and various bullets. The nineteenth century was a period of rapid development for the firearm industry, and many of the patents approved during this period provided termini post quem for recovered artifacts.

For example, percussion caps first were patented in 1822, and were used in both pistols and muzzle loading muskets (Coates and Thomas 1990:72). The Minié ball or bullet was adopted by the United States Army in 1855, and was used extensively during the Civil War (Lord 1982:15). Many of the casings recovered during excavations at Nina Plantation were .22 short rimfire cartridges, patented in 1860 by Smith and Wesson, but first sold in 1857; however, they were in use by Federal forces by the end of the Civil War. By 1875, at least 30 manufacturers were producing these cartridges (Klatt 1981:49).

In addition to firearms and ammunition, a Ketchum hand grenade (Figure 50), probably used during the Civil War, was recovered. Patented in 1861, it was the most common grenade in use, and was furnished in one, two, three, and four pound weights (Lord 1982:117). The recovered grenade was intact, and because of its corroded condition, it was not possible to determine if it contained a charge of black powder. For safety reasons, the grenade was carefully recorded, and subsequently turned over to bomb technicians from the Jefferson Parish Sheriff's Office, Jefferson Parish, Louisiana.

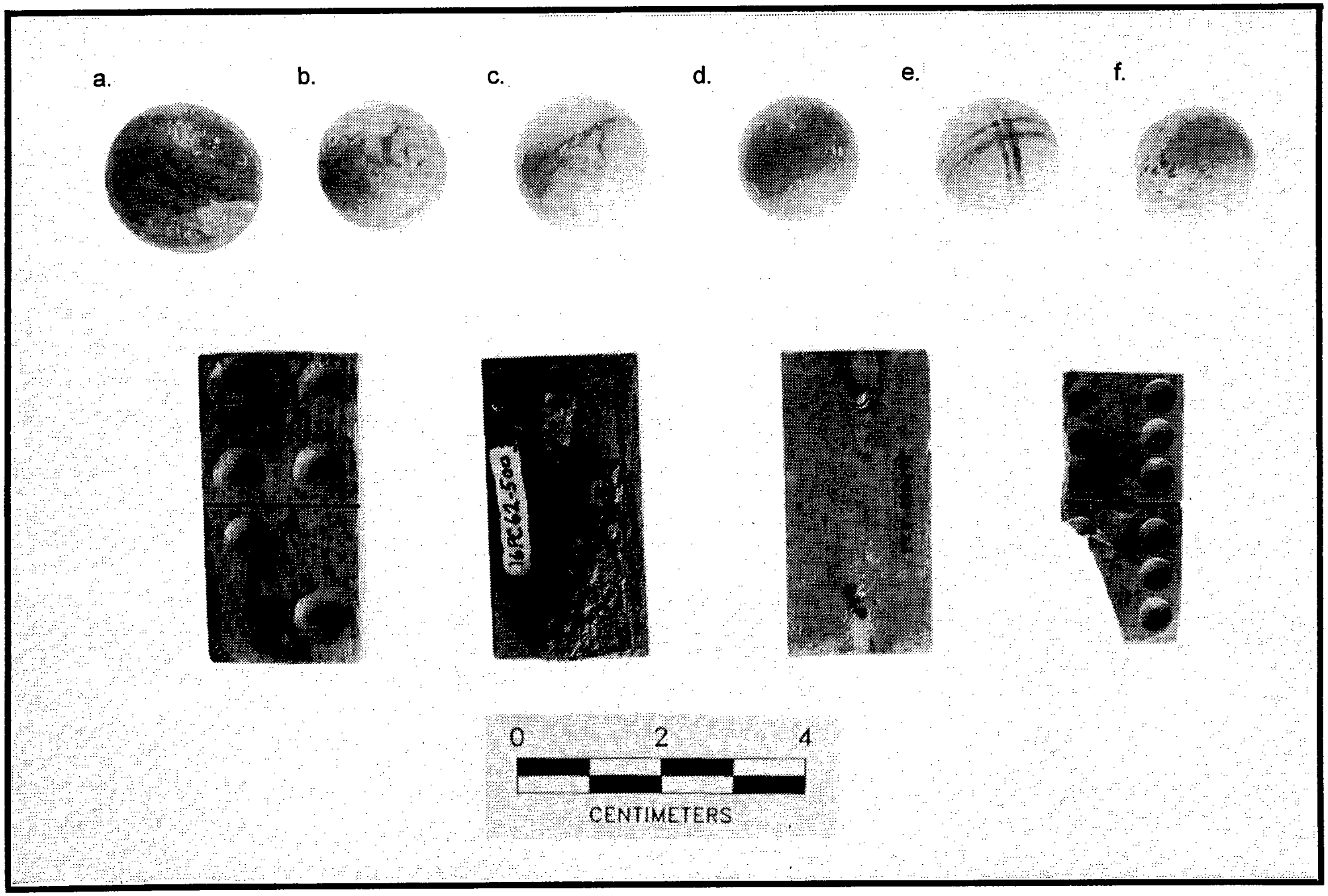


Figure 44. Selected marbles and dominos: (a) marble manufactured from blue glass (FS 370); (b) marble manufactured from gray marble (FS 1304); (c) marble manufactured from pink marble (FS 1451); (d) marble manufactured from gray limestone (FS 1451); (e) marble manufactured from white limestone with red, green, and black stripes (FS 804); (f) marble manufactured from alabaster (FS 1451); (bottom, left to right) bone or ivory dominos, showing fronts (FS 508, 1351) and backs (FS 504, 958), with copper pins for attachment.

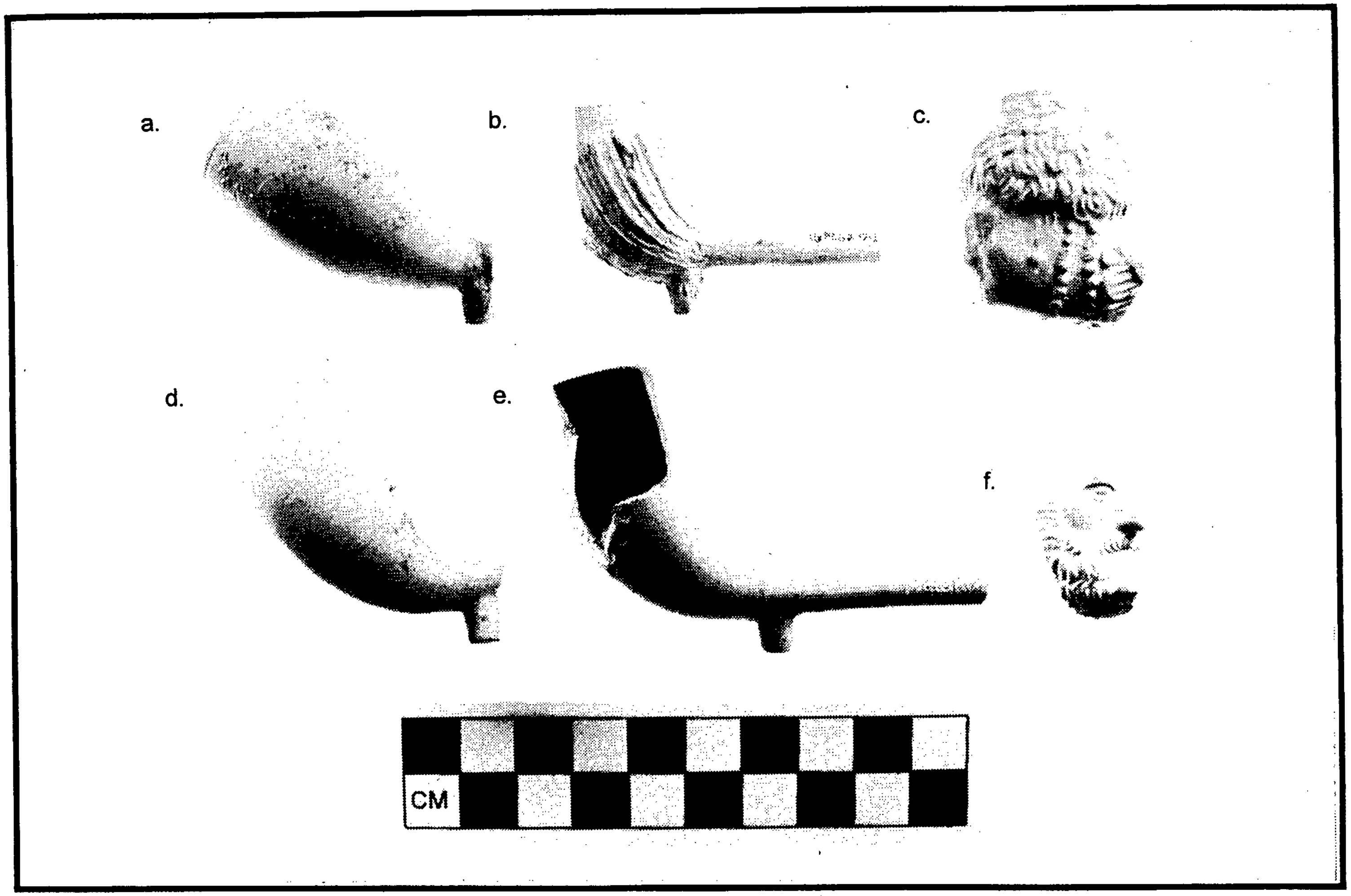


Figure 45. Selected tobacco pipes: (a) white ball clay (Cat. No. 641); (b) white ball clay (Cat. No. 1212); (c) earthenware (Cat. No. 632); (d) white ball clay (Cat. No. 616); (e) white ball clay (Cat. No. 636); (f) white ball clay (Cat. No. 580).

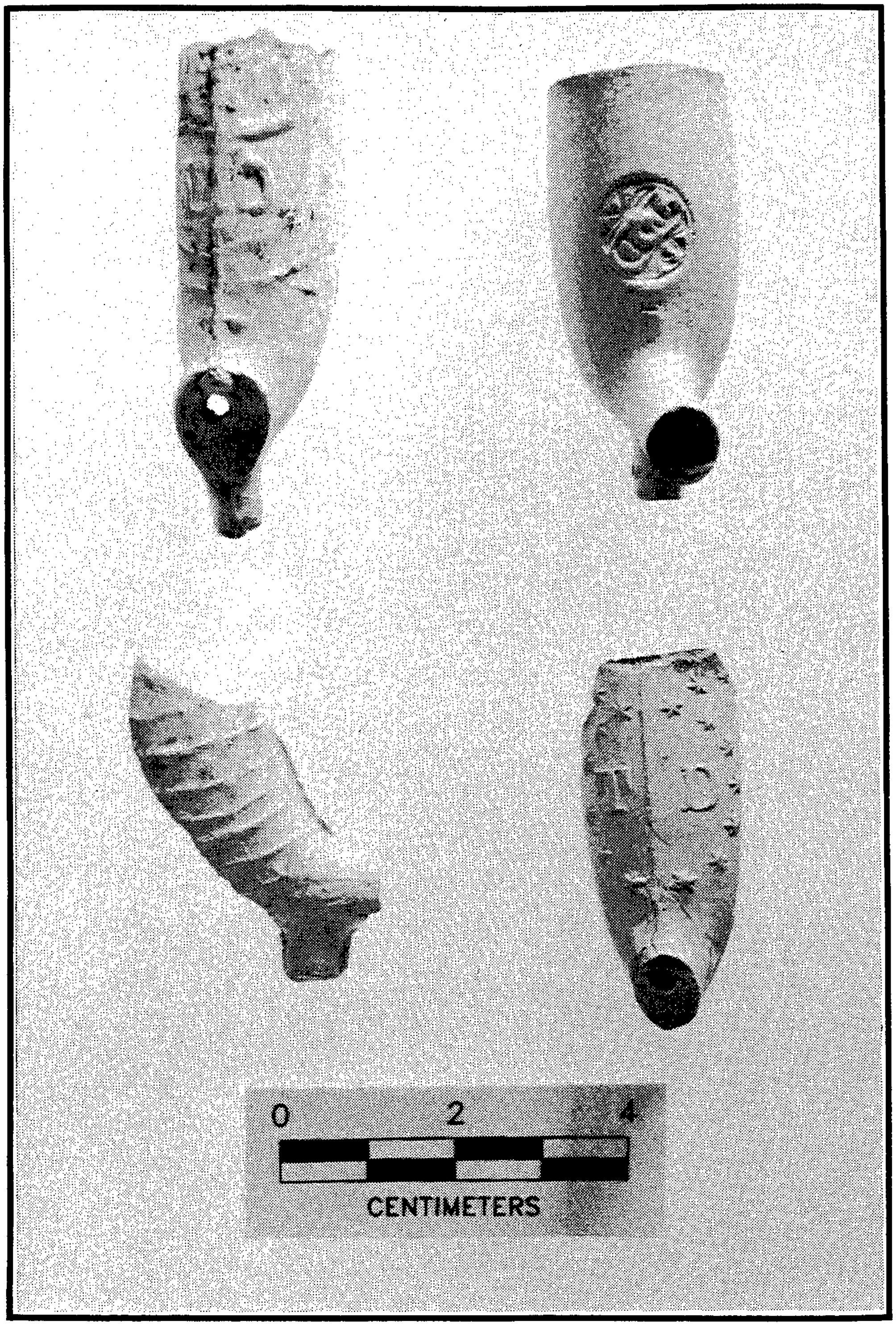


Figure 46. White ball clay tobacco pipes exhibiting "TD" marks: (top, left to right) Cat. No. 1142; Cat. No. 519; (bottom, left to right) Cat. No. 497; Cat. No. 768.

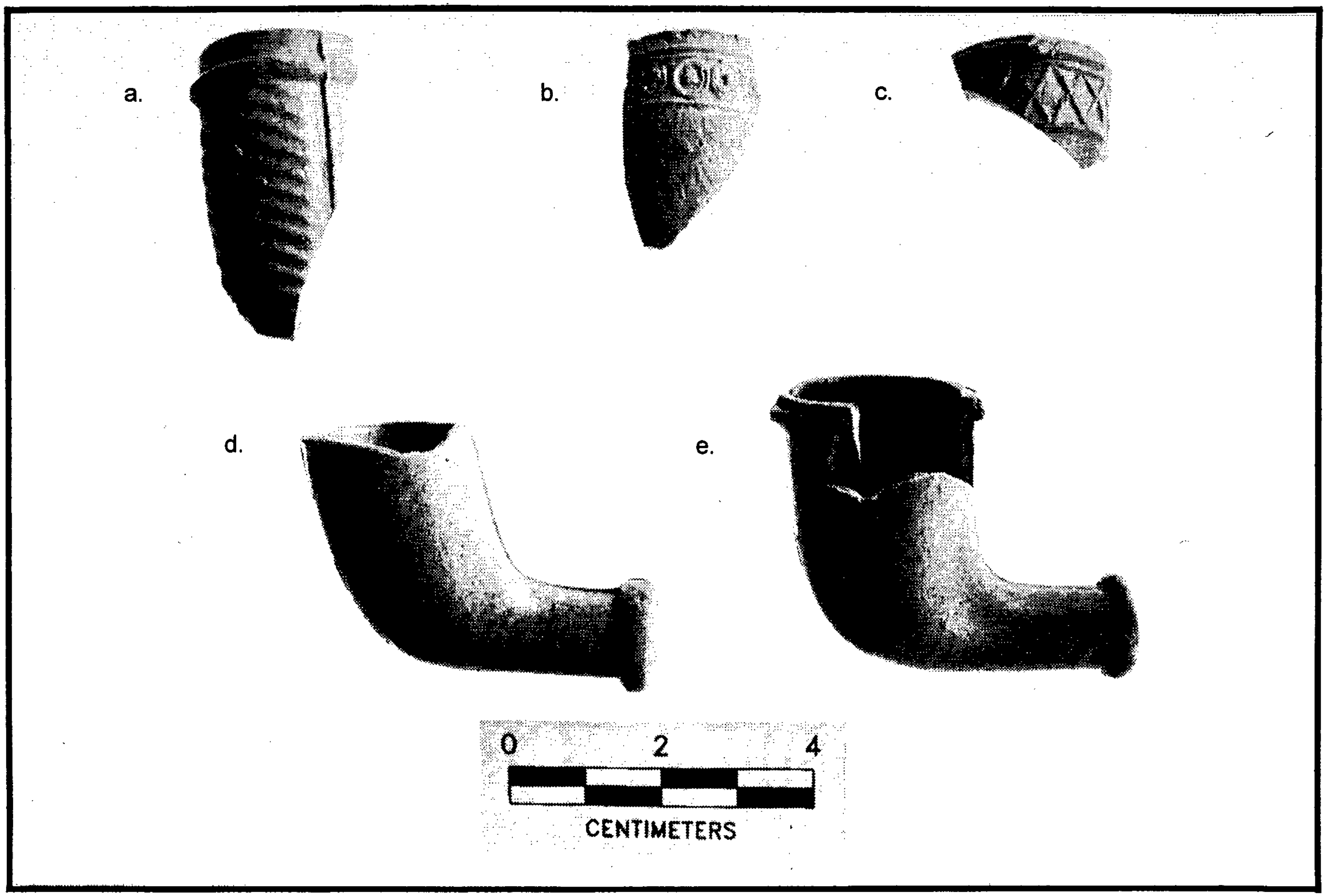


Figure 47. Selected short shanked, reed stem earthenware tobacco pipes: (a) Cat. No. 965; (b) Cat. No. 507; (c) Cat. No. 636; (d) Cat. No. 530; (e) Cat. No. 723.

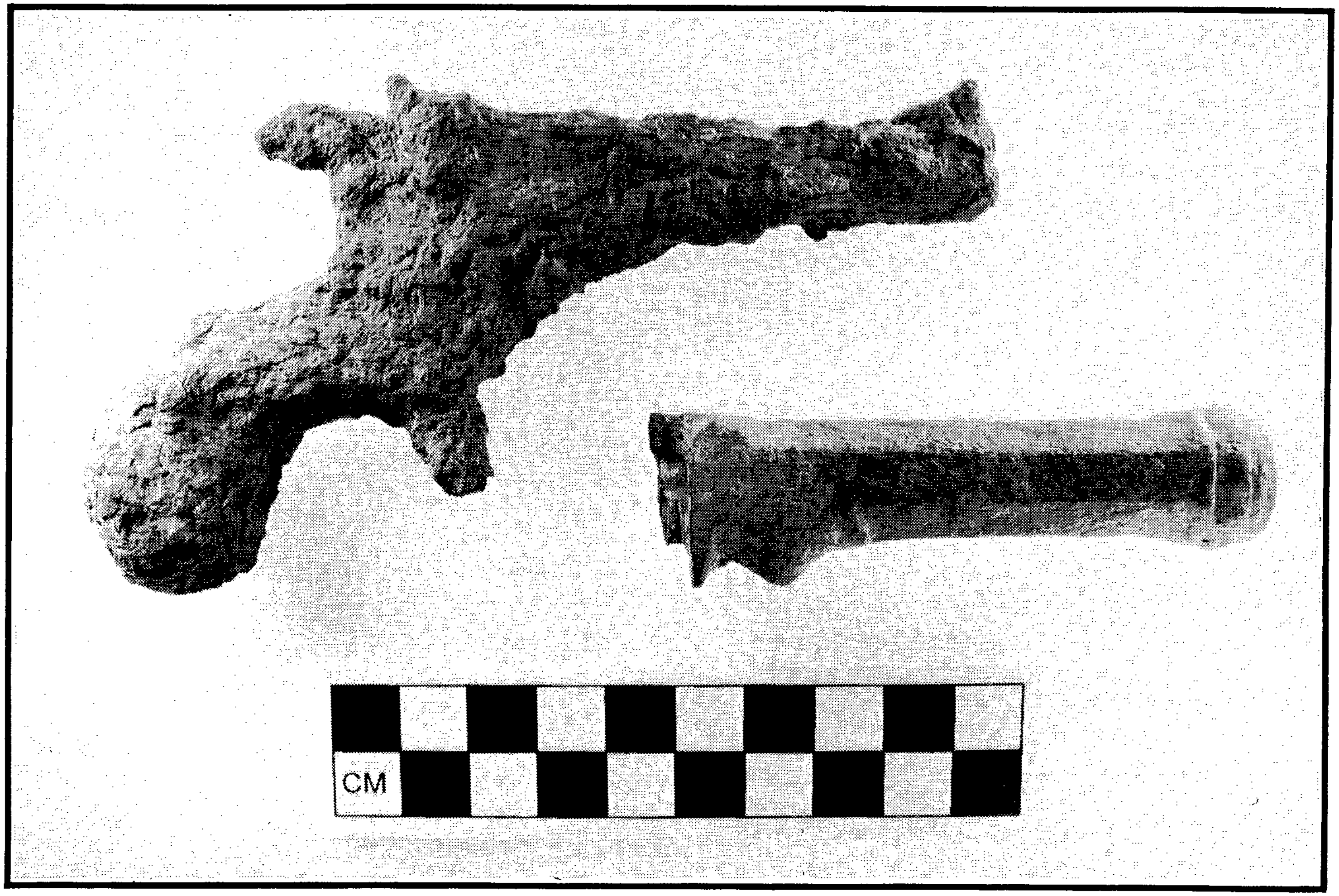


Figure 48. Firearms recovered from Nina Plantation (shown actual size): (top) single shot, breechloading pocket pistol with sheath trigger and centerhammer (FS 1054); (bottom) octagonal brass barrel from a muzzle loading pistol, with flash guard and primer cap nipple housing (note barrel is inverted in photo) (FS 1367).

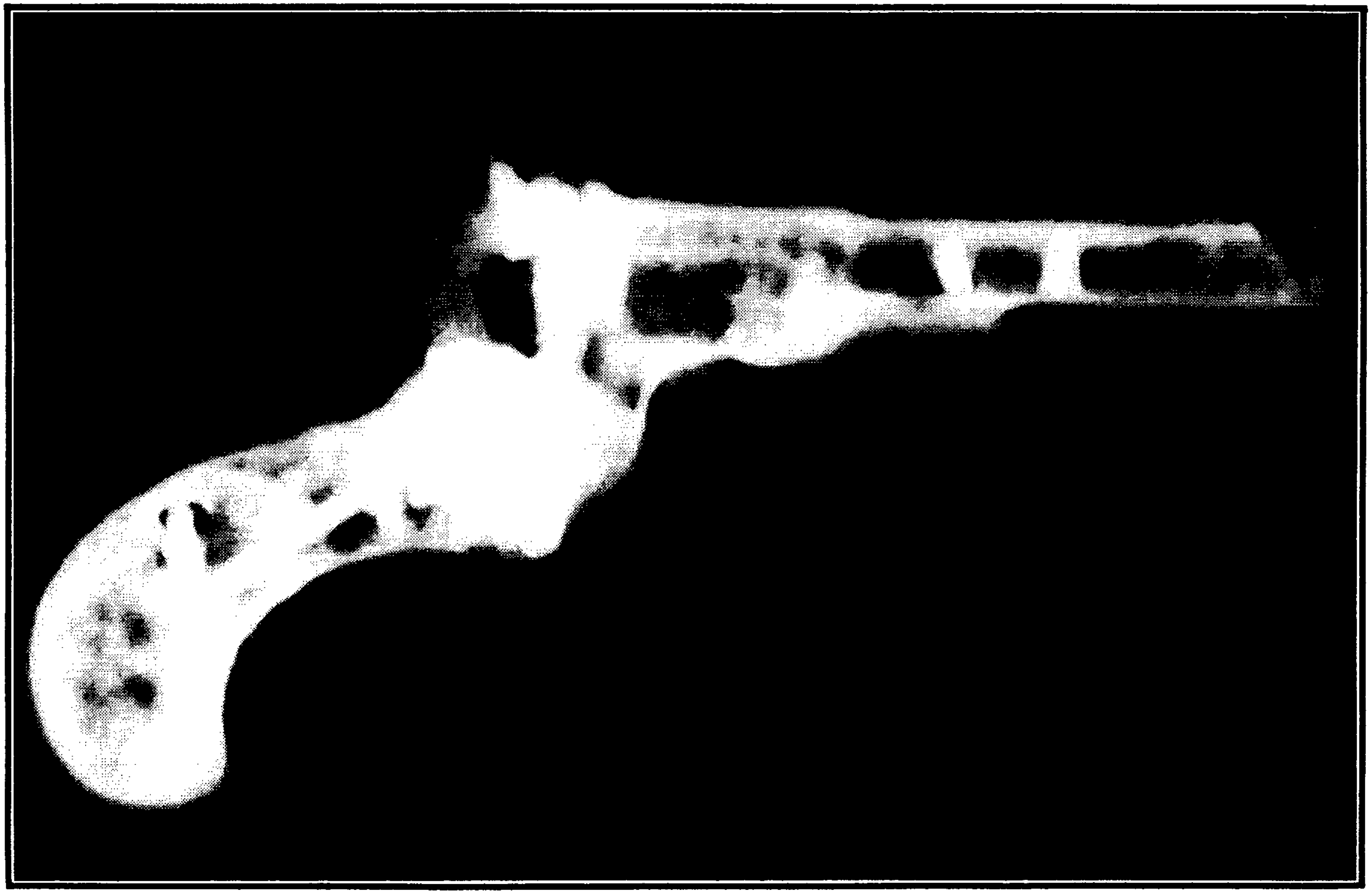


Figure 49. X-ray photograph of breechloading pocket pistol, recovered from the Main House, showing internal mechanism and barrel (FS 1054).

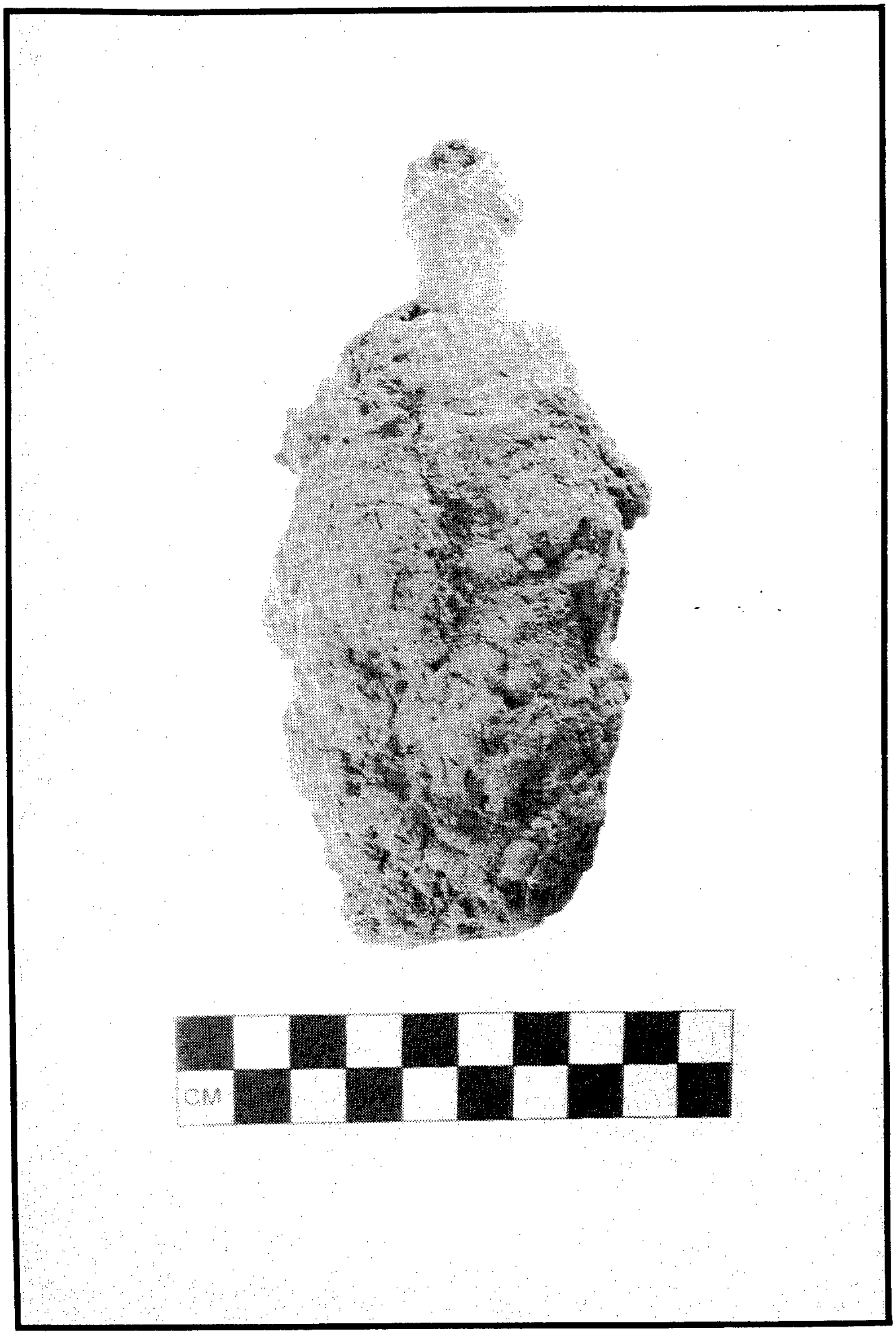


Figure 50. Ketchum hand grenade recovered from Structure 1 in the Outbuilding complex (FS 1337).

Other Miscellaneous Items

A variety of personal items were identified at Nina Plantation. Among these were toothbrush handles, shaving brush handles, and a straight razor handle, all manufactured from bone. Also recovered were fragments of hair combs made from bone and from vulcanite, a hard rubber in common use by the last half of the nineteenth century. Toothbrushes, initially imported from France and England during the nineteenth century, were considered luxury items until after the Civil War (Mattick 1993). Fewer than 20 percent of the American population used toothbrushes before the 1930s (Mattick 1993:168).

Other personal items included jewelry, some with amethyst settings (Figure 51), pocket watch parts, pocket knives, thimbles (Figure 52), eyeglass lenses, slate pencils, bone dominos (Figure 44), alligator tooth pendants (Figure 53), and a religious medallion. Sources useful for the identification of these items included reprints of the Bloomingdale's (1886), Sears, Roebuck & Company (1902 [1969 reprint]), and the 1922 Montgomery Ward (Cohen 1969) catalogs.

Faunal Material

Approximately 16,000 faunal elements were recovered during excavations at Nina Plantation; 7,089 of these elements underwent full analysis. Faunal elements recovered from disturbed, post-occupation, or surface contexts were not included in the analysis. The remaining materials, recovered from contexts possessing integrity and analytic utility, were sorted by excavation block, by excavation unit, and by analytical unit (see Chapter IX and Appendix I of this report). The limited resources that could be devoted to faunal analysis necessitated a sampling strategy that was intended to provide a characterization of the types of species present and to provide some insight into their temporal and spatial distribution. Because a complete data recovery and analysis of all specimens was not possible, the utility of the MNI counts and biomass measurements should be regarded as an aid to the characterization of the deposit, rather than as a statistical tool.

To conform with the intent of a characterization of the deposits, sampling methods were selected that would provide analytic access to as broad a sample as possible. Material from the earliest midden deposits was sparse, and each of the recovered elements was included in the analysis. Faunal remains from the late midden deposits were far more numerous. Proveniences with fewer than 25 specimens were included in their entirety; those with more than 25 specimens were subjected to a 50 percent random sample. For this sampling procedure, tables of random numbers were computer-generated by the Lab Director. Faunal bags from each analytic unit were placed on a numbered grid and were selected in accordance with the random number table. Some additional judgement was used in the final selection. For example, if material from the late midden deposits duplicated large and diverse samples from adjacent excavation units and identical analytic units, then an alternate choice was made. In addition, if a clearly unique specimen from a particular analytic unit was bypassed during the random number choice, it was later included in order to ensure that the species list was as complete as possible.

This process resulted in a sample of faunal material from all areas and temporal periods of the site that was sufficient to characterize the assemblage. The final sample selected for analysis approximated 44 percent of the total population; a list of all the included proveniences and analytic units is included in Appendix VII of this report.

A detailed analysis of the faunal assemblage was conducted by Dr. Elizabeth Scott (Appendix VII). Primary data collected consisted of raw fragment counts, fragment counts adjusted for fitted specimens, and weights to the nearest 0.1 gram. Identifications were carried out to the lowest taxon possible, following standard zoological classification and nomenclature. Also noted during the primary analysis were worked bone, butchering marks, burning and calcining, and gnaw marks.

Secondary data were derived from calculations to determine the minimum number of individuals (MNI) represented for each taxon, and the biomass (meat weight) represented by the bone weight for each taxon. MNI was calculated for each provenience or analytical unit, using the criteria of side, size, age, and sex (Wing and Brown 1979:123-126; Reitz and Scarry 1985:17). Biomass was estimated using the log-log regression formula of skeletal mass allometry, based on bone weight (Wing and Brown 1979:127-129;

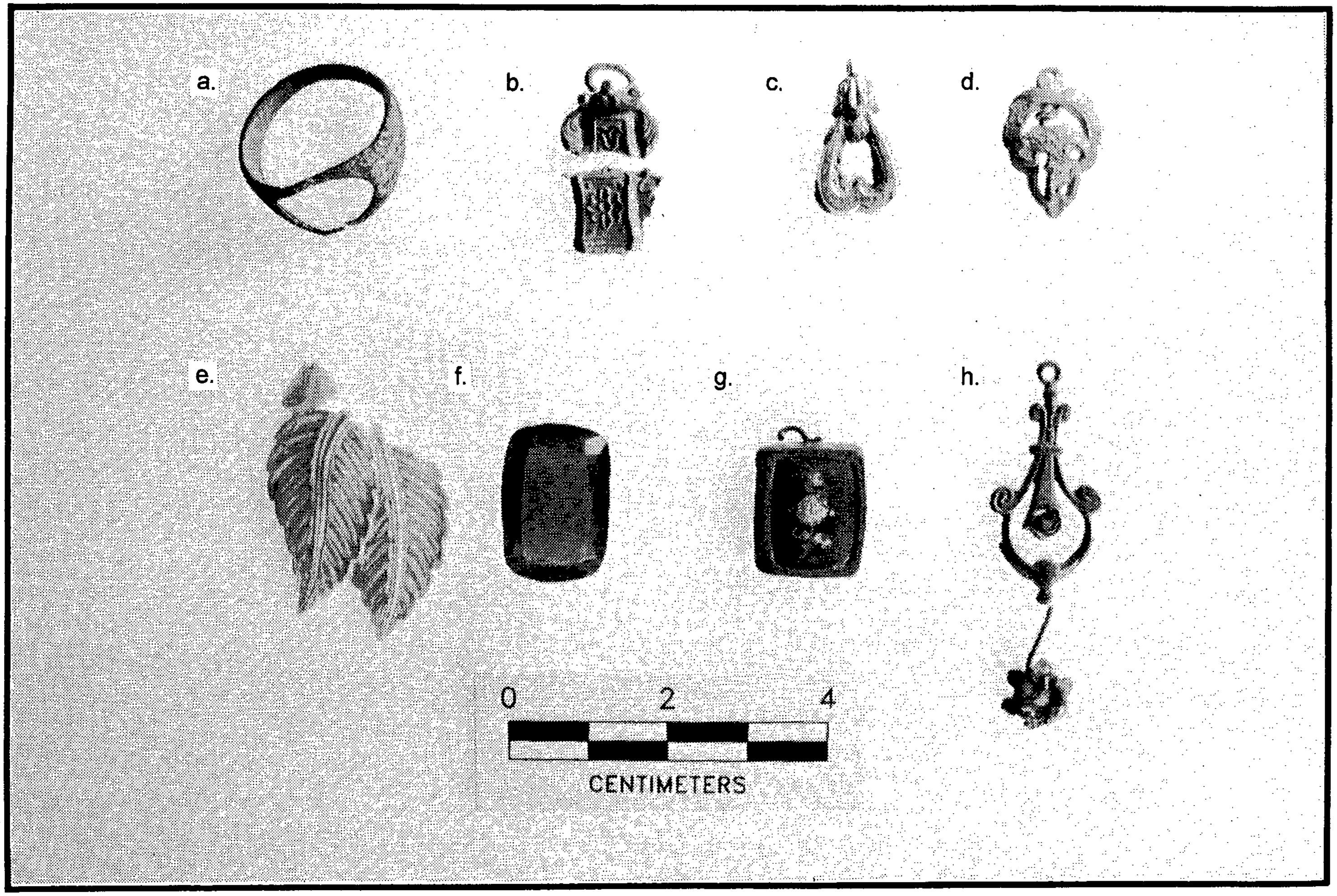


Figure 51. Selected jewelry. All but (g) were recovered from the Outbuilding complex: (a) brass ring with impressed leaf decoration on sides (FS 801); (b) brass pendant with impressed floral pattern (FS 1730); (c) gold-plated pendant (FS 748); (d) two-piece brass leaf pendant (FS 802); (e) cut shell brooch inlay (FS 1329); (f) purple, cut glass jewelry inset (FS 1352); (g) cobalt glass with polychrome flower inlay in brass pendant setting (FS 1057); (h) gold-plated brass pendant or earring with cut amethyst crystals in two settings (FS 1411).

Figure 52. Selected domestic items recovered from the Outbuilding complex: (top, left to rig[illegible] [illegible] (FS 948); cuprous thimble (FS 1515); silver thimble (FS 658); (bottom) iron scissors (FS 1422).

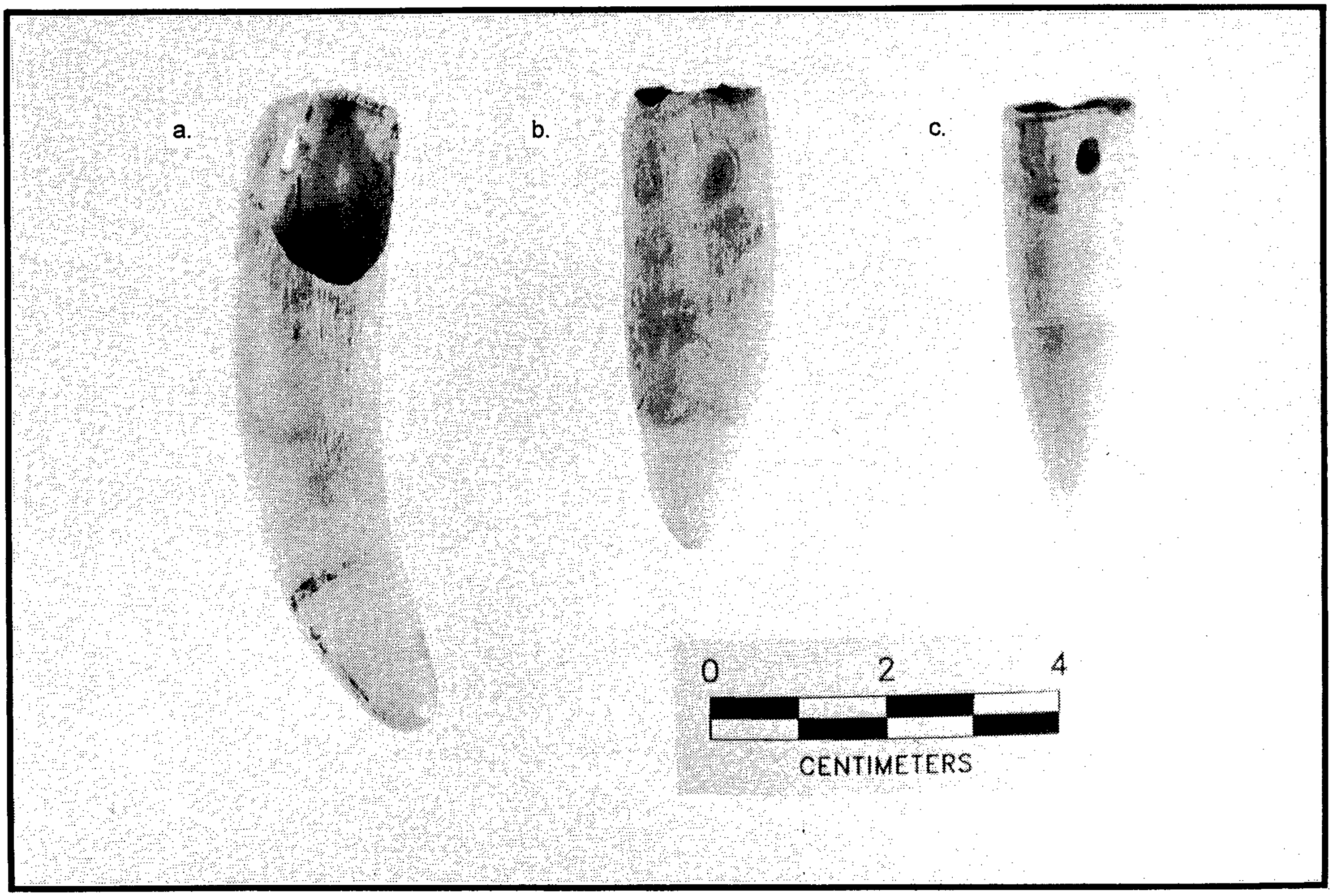


Figure 53. Alligator tooth pendants: (a) FS 1744; (b) FS 749; (c) FS 1486. Note drilled hole in (c), and partially drilled hole in (b).

Reitz and Scarry 1985:18-19, 67; Reitz et al. 1987). This method predicted the amount of meat that would have been adhering to the actual recovered bones; therefore, it provided a relatively conservative estimate of the amount of meat contributed by each species or taxon.

Botanical Material

Botanical specimens recovered during data recovery at Nina Plantation either were hand collected, or derived from flotation samples. The results of the botanical analyses are found in Chapter II and in Appendix VIII of this report.

Hand Collected Botanical Specimens

The hand collected specimens usually included those large enough to be recognized by archeologists during the excavation and screening processes. In the field, an attempt was made to ensure that the collected materials remained in the same condition as when they were found; most remains were moist, due to the prevalent soil conditions found at the site. These plant materials ranged in size from small peach pit fragments to large structural beams. A total of 28 hand collected samples were analyzed. The first step in the analysis was an examination to determine if they were wood or non-wood materials.

If found to be wood, identification of the species was attempted. Each wood fragment was broken to reveal a fresh transverse section. The resulting surface was examined with the aid of a low power (9-40 X) binocular microscope. Distinguishing characteristics of the vessels/resin canals, rays, parenchyma, and late/early wood transition were noted for each specimen. Standard texts (e.g., Core et al. 1979; Hoadley 1990) and a study collection of pertinent wood species aided in the analysis.

Identification sometimes was limited by the level of decay exhibited by the wood and by the small sample size. For example, a cross-section of several growth rings is required for accurate identification of any wood fragments. Much of the wood recovered from the Nina excavations was quite decayed, thereby altering or destroying the cellular structure of the wood. As Hoadley (1990:190) has noted, "advanced decay produces drastic changes in many gross features. Useful characteristics such as color, evenness of grain, ray fleck and parenchyma arrangement may lose their original macroscopic appearance." In addition, the characteristic red cedar fragrance was affected by decay, although it was preserved in a few of the otherwise decayed specimens. The waterlogged nature of the Nina samples created another problem with identification; wood identification guides describe characteristics only of non-waterlogged materials. Drying the specimens was not an option, since the process of drying destroys the cellular structure of non-carbonized botanical remains. During analysis, it was assumed that water-logged materials retained the basic characteristics of their species, but finer features such as the diameters of vessels and tracheids were altered by swelling.

This "swelling" problem was especially acute for the differentiation of baldcypress (*Taxodium distichum*) and eastern redcedar (*Juniperus virginiana*). The longitudinal tracheids of baldcypress are approximately 45-70 micrometers wide, whereas the longitudinal tracheids of eastern redcedar are half that width (Hoadley 1990:17). As a result, two major characteristics for distinguishing these species, the characteristic scent of eastern redcedar and the larger tracheid size of baldcypress, often were obscured in the materials recovered from Nina.

Flotation

Water flotation is a recovery technique that takes advantage of the differences in the density of organic and inorganic materials to separate organic matter from the soil matrix. This procedure greatly enhances both the extent and quantity of botanical remains that can be recovered from archeological contexts.

Flotation processing employed standard and conventional techniques and equipment. Each soil sample was measured volumetrically in liters prior to flotation. Volumes were measured in quarter liter increments, since natural variation in the friability and texture of the soils would have meant that measuring in smaller increments would not have increased the precision of the measurement. The flotation system was designed to allow water pressure from an ordinary plumbing spigot to act as an agitator to aid in the separation of botanical materials from the soil matrix. Water overflowed from the flotation tank onto a tightly woven nylon (tricot) fabric that, while permeable to the water, captured any of the

floating organic or cultural debris. A stiff, submerged 1.5 mm (1/16 in or 0.0625 in) galvanized wire mesh screen, captured the heavy, non-buoyant material. Thus, the flotation process resulted in the recovery of both heavy and light fractions of material. Residual soil sediments that passed through the 1.5 mm (1/16 or 0.0625 in) wire mesh were discarded. All processed soil samples were air-dried prior to analysis. Flotation processing was used to recover both micro-archeological and archeobotanical specimens. After the flotation process was completed, the recovered material was examined and sorted for further analysis.

Flotation was conducted on soil samples from all soil features identified during excavation at Nina Plantation (16PC62), i.e., a total of 84 samples. In addition, 75 samples retained from midden contexts were floated; these represented a 50 percent sample of all midden proveniences. Sample size was standardized at two liters.

Flotation Botanical Specimens. Initial examination of the material resulting from soil sample flotation revealed little or no evidence of botanical remains. Because of this it was decided that microscopic botanical analysis was justified only for samples originating from hearth features and from the densest midden deposits within the site, i.e., those areas considered to have the highest probability for containing carbonized botanical remains. The light materials from each sample were weighed and then sifted through a series of geological sieves (2.00 mm, 1.70 mm, 1.00 mm, 0.71 mm, 0.355 mm). Wood, hickory nutshell, "other stem," and "unknowns" were removed only from the greater than 2.00 mm fractions. If those plant remains were not present in the greater than 2.00 mm fraction, they were removed from the smaller fractions, but not from the 0.355 mm fraction. Whole seeds and seed fragments were removed from all size fractions, and their identification was attempted.

Several special categories of plant remains were designed to describe the character of the remains. "Other stem (Monocot)" category describes stem materials that were derived from an unidentified monocotyledonous plant. The Cheno-Am category describes small starch seeds that could either be *Chenopodium* sp. (goosefoot) or *Amaranthus* sp. (pigweed). Starchy materials were divided into categories depending on their condition: remains with possible cortex were identified as "Starchy unknown (tuber?);" remains with no visible cortex were simply identified as "Starchy unknown." Some seeds and seed fragments could be identified only to the genus or family level.

Identification of the plant remains was made with the aid of standard guides (e.g., Martin and Barkley 1961) and a reference collection of relevant species. The ubiquity (percent of total samples in which a given material is present) of each category was calculated. Ubiquity is a good analytical technique in paleoethnobotany, because it is "useful, within limitations, for showing general trends when one has little control over the sources of patterning in one's data" (Popper 1988:64).

Geomorphological Analysis

Geoarcheological fieldwork and analysis were conducted by Dr. Frank J. Vento (Geomorphologist), Dr. Anthony Vega (Paleoclimatologist), and Dr. Stephen J. Shulik (Paleomagnetist/Statistical Analyst). The study included a review of both general and specific references on the surficial geology and quaternary history of the project area. In addition, topographic and soil survey maps, and geologic and hydrologic charts were reviewed.

Field and laboratory investigations were initiated on June 18, 1995, and completed on August 8, 1995. Fieldwork included a pedestrian surface reconnaissance of the site area, and the inspection and mapping of soils in archeological units excavated at the site. In addition, a series of soil sample columns were collected for granulometric, grain composition, SEM, and biogeochemical analyses. Collected from representative excavation units at the site, these 500 gm sediment samples were taken from each cultural and non-cultural stratigraphic horizon, at 10 cm (3.94 in) intervals. If sediment composition changed within a 10 cm (3.94 in) interval, samples from each side of the change were taken. The sediment samples subsequently were divided into 50 gm fractions for analytical purposes, using a random sample splitter.

A standard granulometric sieve analysis was conducted on 50 gram fractions from each of the sediment columns. Wet sieving was performed to determine the distribution of grain sizes within each sample. Sieve size intervals included 4mm

(-2 phi), 2 mm (-1 phi), 1 mm (0 phi), 0.5 mm (1 phi), 0.250 mm (2 phi), 0.125 mm (3 phi), and 0.063 mm (4 phi) sizes. The percentage of each size class was determined by comparison of the weight of the dried sieve fraction to the initial weight of the dry sample. For sediments finer than 0.063 mm (4 phi), the resulting percentage was essentially equivalent to the weight lost from the initial sample during wet sieving (Vento, Adovasio and Donahue et al. 1980). The dried and weighed fraction for each size class was saved and stored in a sealed vial for detrital grain composition analysis. Due to the small percentage of silt and clay-sized grains in the upper horizons of the site, no detailed hydrometer, pipette, or Coulter Counter analyses were performed.

CHAPTER VIII

RESULTS OF DATA RECOVERY EXCAVATIONS AT SITE 16PC62

Introduction

As described previously, Site 16PC62 (Nina Plantation), is a nineteenth century sugar and cotton plantation, located adjacent to the Mississippi River near the town of New Roads, Louisiana. The site first was recorded in 1992, during cultural resources survey conducted by Earth Search Inc. (Yakubik et al. 1994). Phase II evaluatory testing subsequently carried out at the site resulted in a positive assessment of the site's eligibility for inclusion in the National Register of Historic Places, and Phase III data recovery was recommended (Yakubik et al. 1994:453-454). Data recovery excavations were conducted by R. Christopher Goodwin & Associates, Inc. between October 1993 and September 1994, on behalf of the Army Corps of Engineers, New Orleans District. This mitigation effort was undertaken in accordance with the Scope of Work dated 1993, and with the modified Scope of Work dated February 1994. Field methods were designed to address research questions outlined both in the Scope of Work (Appendix IX), and in the data recovery proposal prepared by R. Christopher Goodwin & Associates, Inc. These research questions were reviewed in Chapter VI of this report, and the field methods were described previously in Chapter VII.

This chapter describes the results of mitigation efforts at Site 16PC62 (Nina Plantation), and it reviews the excavation sequence, the site stratigraphy, the excavated trenches, and the architectural and midden components. Analytical results, including a discussion of the analytical sequence, is contained in Chapter IX.

Cartographic Research

Prior to the initiation of excavations at the site, archival and cartographic research was conducted. After compilation of historic maps and contemporary documents, a series of computer-aided, cartographic overlays were prepared (Figure 54). Cartographic resources used in these overlays included modern hydrographic survey sheets from 1993 (Sheets 19 and 20), the 1963 (photorevised 1980) U.S. Geological Survey topographic quadrangle, the site plan from the Phase II excavations (Yakubik et al. 1994:375), and historic maps that depicted structures within the project area. Historic maps included the Mississippi River Commission (MRC) charts from 1880-1881 (Chart 64), and 1880-1883 (Chart 143), a ca. 1890 map of the proposed levee setback (Figure 20), and measured sketches of the project area from surveyors' notebooks dating from 1882-1883 (Figure 19).

By aligning known points on both modern and historic maps, a composite site plan was produced that incorporated the modern and the historic banklines, the historic structures, Phase II excavation trenches, and the current project site grid. This plan later was modified to include architectural details revealed during excavation (Figure 54).

The results of cartographic research clearly revealed the extent of erosion that had occurred

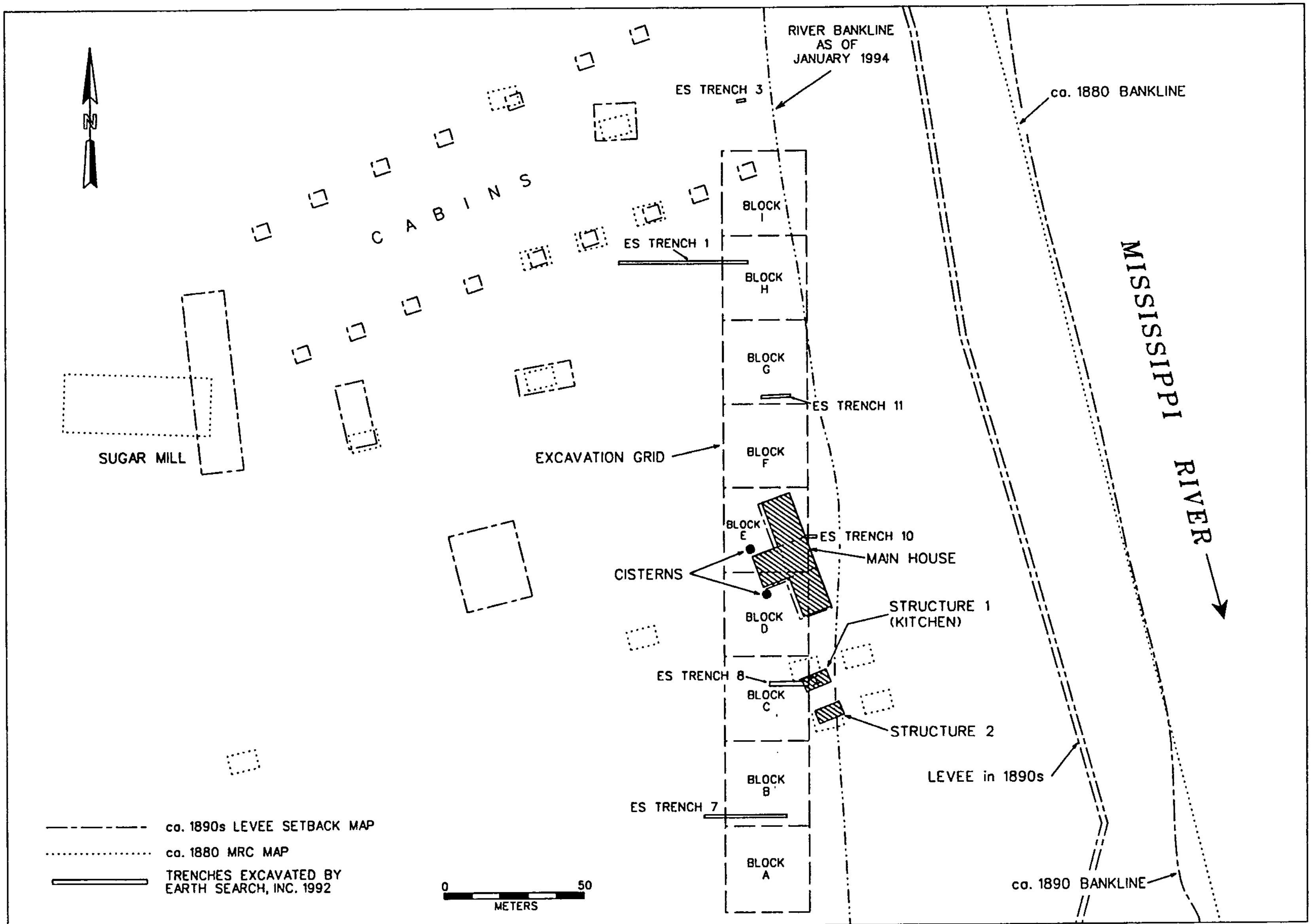


Figure 54. Overall plan of Nina Plantation with historical map overlays, banklines, structures, selected Phase II test trenches, and Phase III excavation grid.

since the abandonment of the site at the end of the nineteenth century. The 1890 bankline had been located approximately 100 m (328 ft) from the main plantation house; in 1993, the river's edge was less than 1 m (3.28 ft) away. The cartographic overlay also indicated that two of four small structures depicted south of the main plantation house on the 1880-1881 MRC chart had succumbed to twentieth century erosion. The historic map overlay indicated that the main plantation house was located in the immediate vicinity of Phase II Trench 10 (Yakubik et al. 1994:375) (Figure 54); this trench had barely missed the structural features of the house. Features exposed during Phase II excavation of Trenches 8 and 9 were interpreted as structural remains from the main plantation house (Yakubik et al. 1994:413); the evidence from completed map overlays suggested that these features were related to a complex of four outbuildings, rather than to the plantation owner's dwelling.

Magnetometer Survey

A magnetometer survey also was conducted at Site 16PC62, prior to excavation. Intended to aid in the selection of excavation areas, the survey incorporated those areas that had produced the highest concentration of cultural material during the Phase II excavations at the site. After the site grid was established, site Blocks A - I were surveyed at 2 m (6.56 ft) intervals. This grid was small enough to provide information on significant anomalous concentrations of a ferrous or magnetic nature. It was hoped that foundation pier locations could be determined, although brick normally displays a very low amplitude signal. The results of this survey are shown in Figures 55 - 63.

Blocks A and B showed no anomalies (Figures 55 and 56), but in Blocks C, D, and E, the pattern of anomalies was significant (Figures 57, 58, and 59). Although oriented in the same direction as the piers of the main house, the anomalies in Blocks D and E actually represented debris from the occupation and destruction of the building. In Block C (Figure 57), the large anomaly in the northern portion of the block represented debris associated with Structure 1.

In Block F (Figure 60) anomalies were present, but later investigation indicated they were associated with either post-occupation activities, or light concentrations of occupational debris. The plan of Block I (Figure 63) shows geologic anomalies caused by differential soil removal. Block I had suffered severe soil slumping and erosion, and a north-south rift was apparent at the surface.

Mitigation Excavation Sequence

Phase II evaluatory testing at Nina Plantation (16PC62), provided evidence of intact features associated with the owner's house, the slave quarters, and the sugar mill; artifacts corroborated dates of occupation between ca. 1820 and ca. 1890 (Yakubik et al. 1994). The results of the Phase II investigations also suggested that the site possessed significant research potential related to nineteenth century plantation life (Yakubik et al. 1994:453). Data recovery was designed to address research questions that focused on spatial relationships, patterns of material culture, and subsistence strategies, both in diachronic and synchronic perspectives.

The data classes necessary to address these issues included detailed information on plantation layout, in addition to stratigraphic information. The recovery of this type of database was best achieved through the use of wide area exposures. In the century since the abandonment of Nina Plantation, the Mississippi River had deposited a deep layer of fluvial sediment on the site; in order to expose wide areas of the site, a method was devised for stripping the approximately 1 m (3.28 ft) thick overburden from the site.

The areas designated for the removal of overburden were chosen after careful consideration of the results of the Phase II investigations, the cartographic and archival research, the magnetometer survey, a bankline reconnaissance, and the excavation of Trenches 1 - 3. Based on this information, it was decided that structural features and concentrations of cultural material were most likely to be recovered from Blocks C, D, and E (Figure 64). The alluvial overburden from each of these 30 x 30 m (98.4 x 98.4 ft) areas was carefully removed with the aid of a CAT 225 excavator, and a rubber-tired backhoe with a "clean-up" blade. The subsequent mechanical stripping of Block F was carried out after the excavation of Trenches 10 and 11 (Figure 64) revealed two features (Features 52 and 53), and a moderate density of artifactual material. A total of 3,400

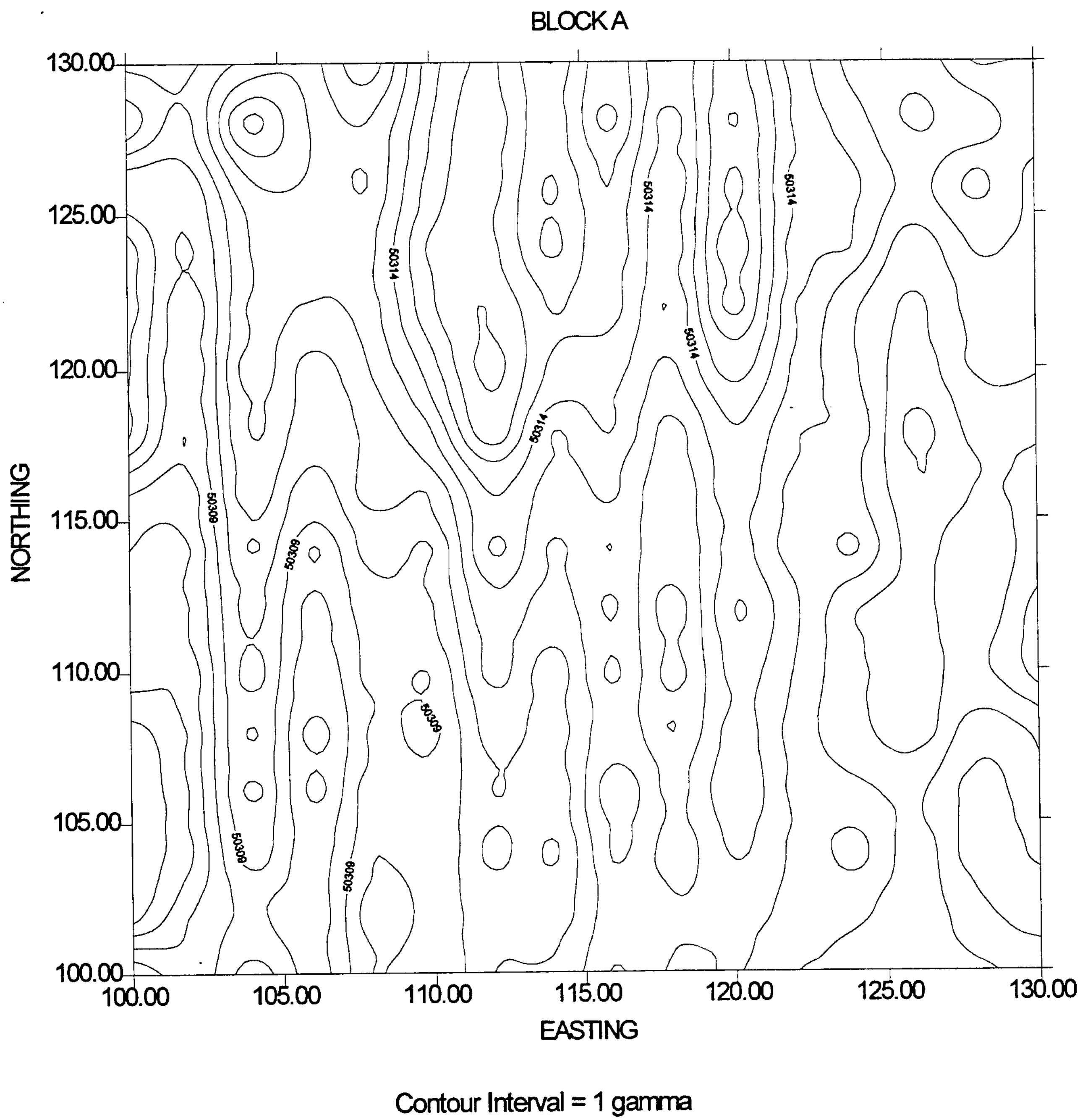
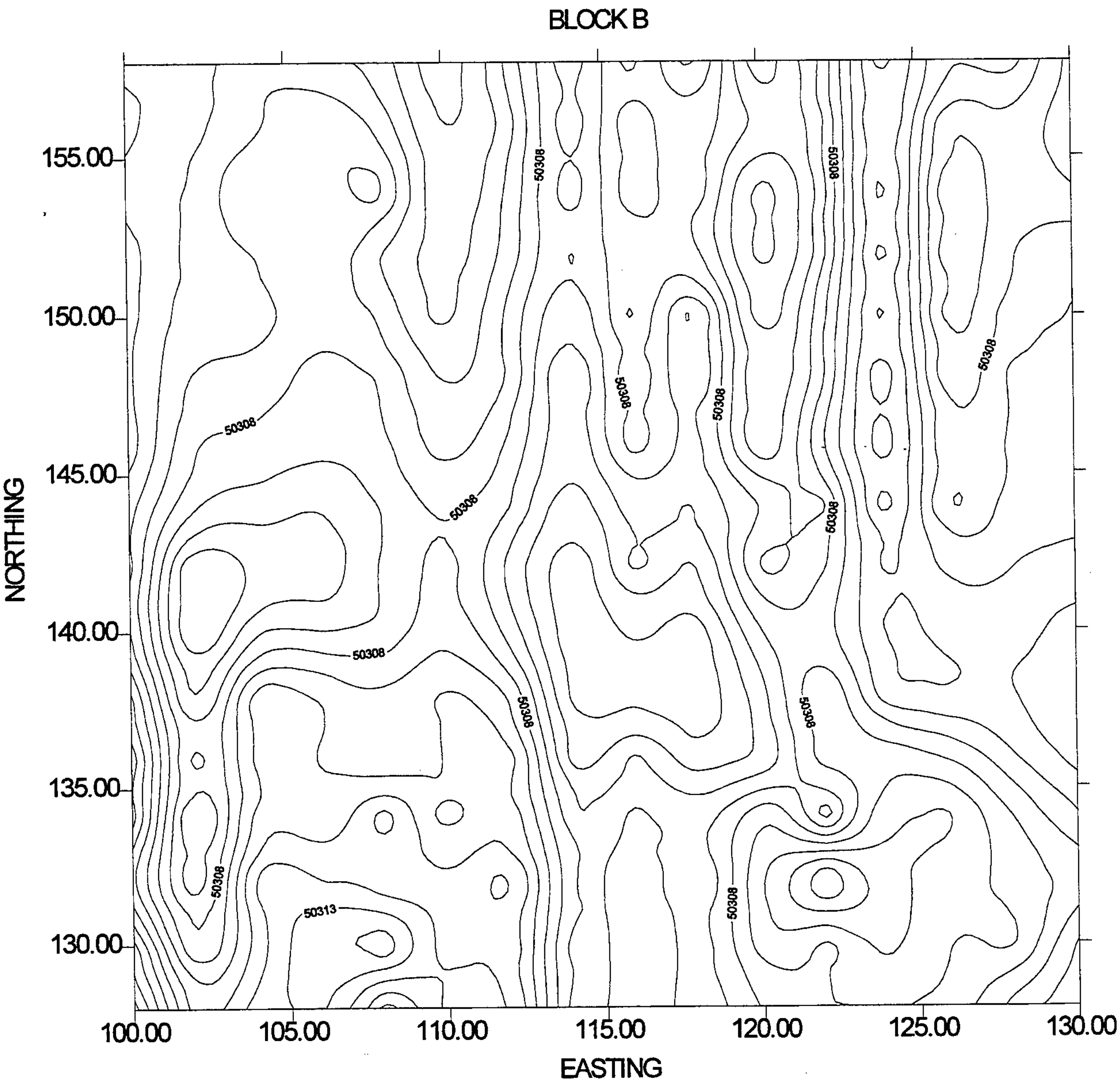


Figure 55. Magnetic contour plan of Block A.



Contour Interval = 1 gamma

Figure 56. Magnetic contour plan of Block B.

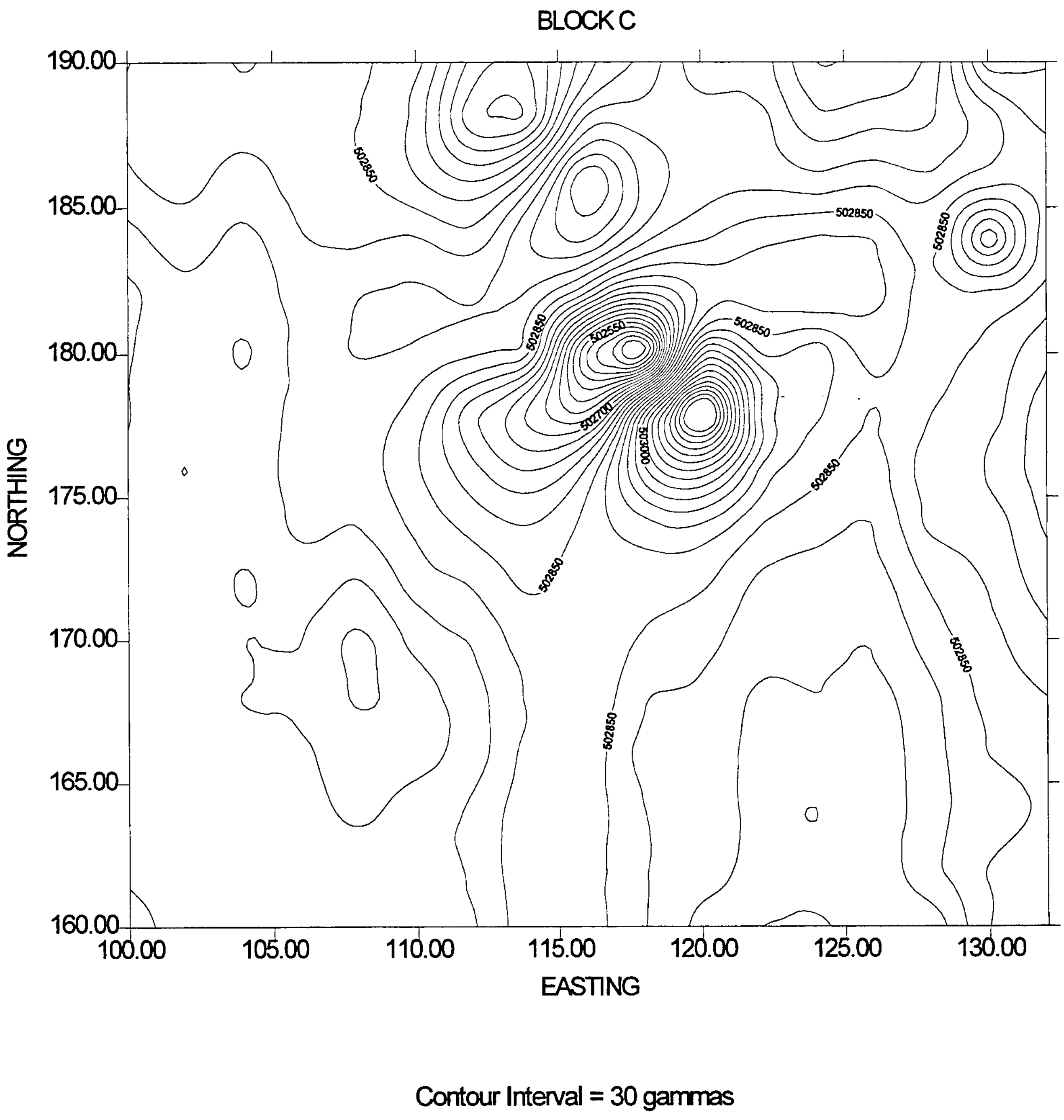
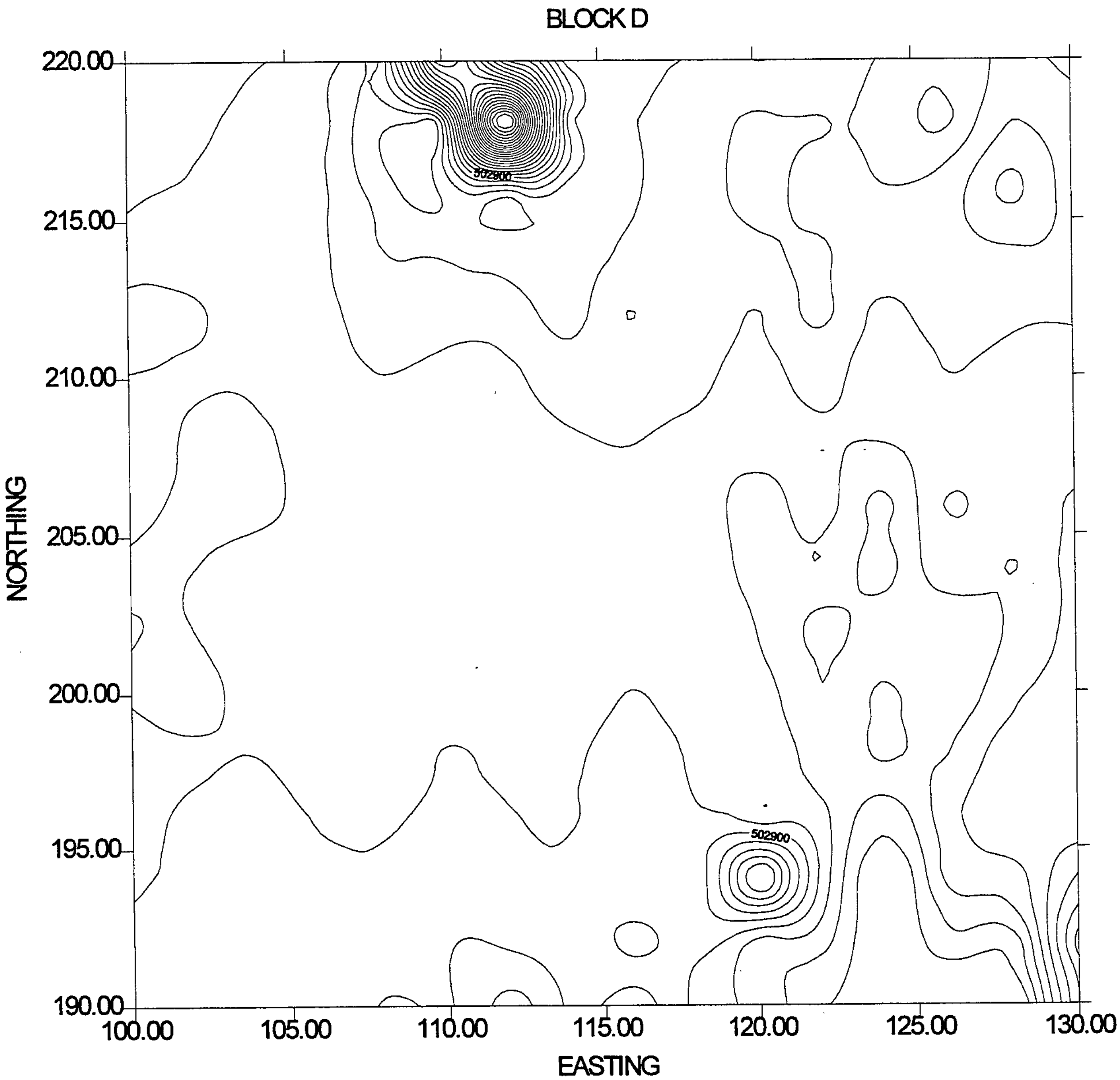


Figure 57. Magnetic contour plan of Block C.



Contour Interval = 50 gammas

Figure 58. Magnetic contour plan of Block D.

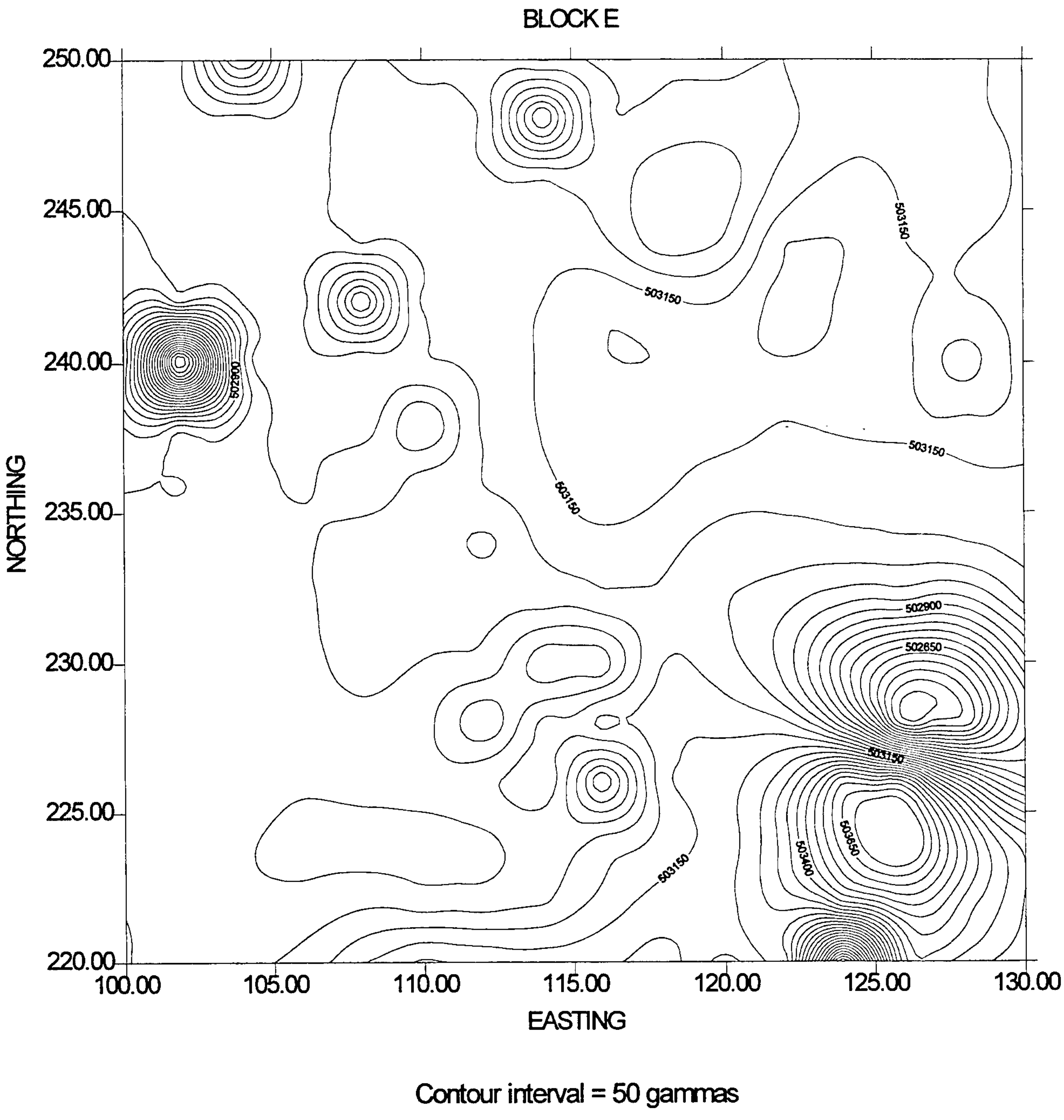
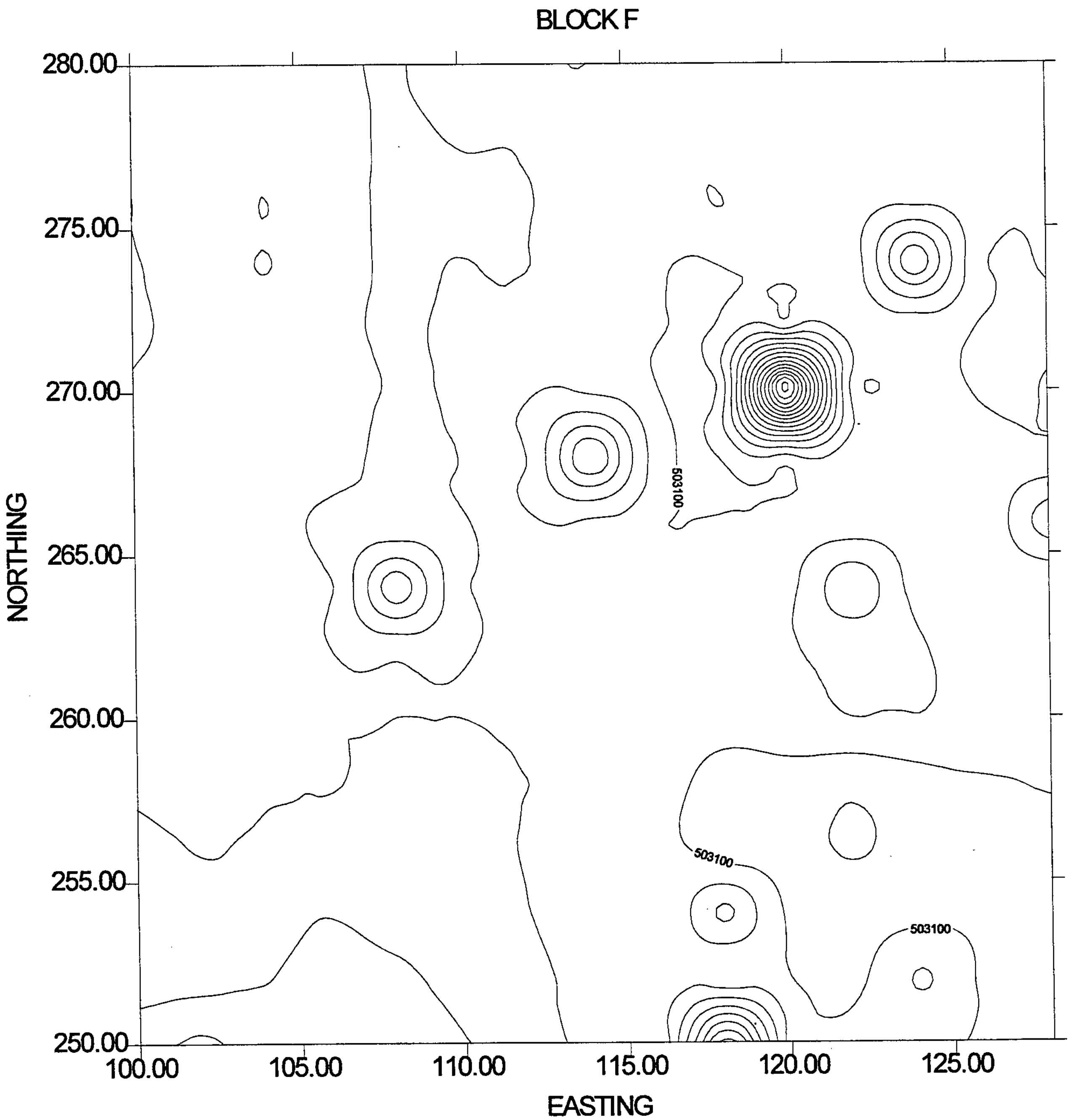


Figure 59. Magnetic contour plan of Block E.



Contour Interval = 50 gammas

Figure 60. Magnetic contour plan of Block F.

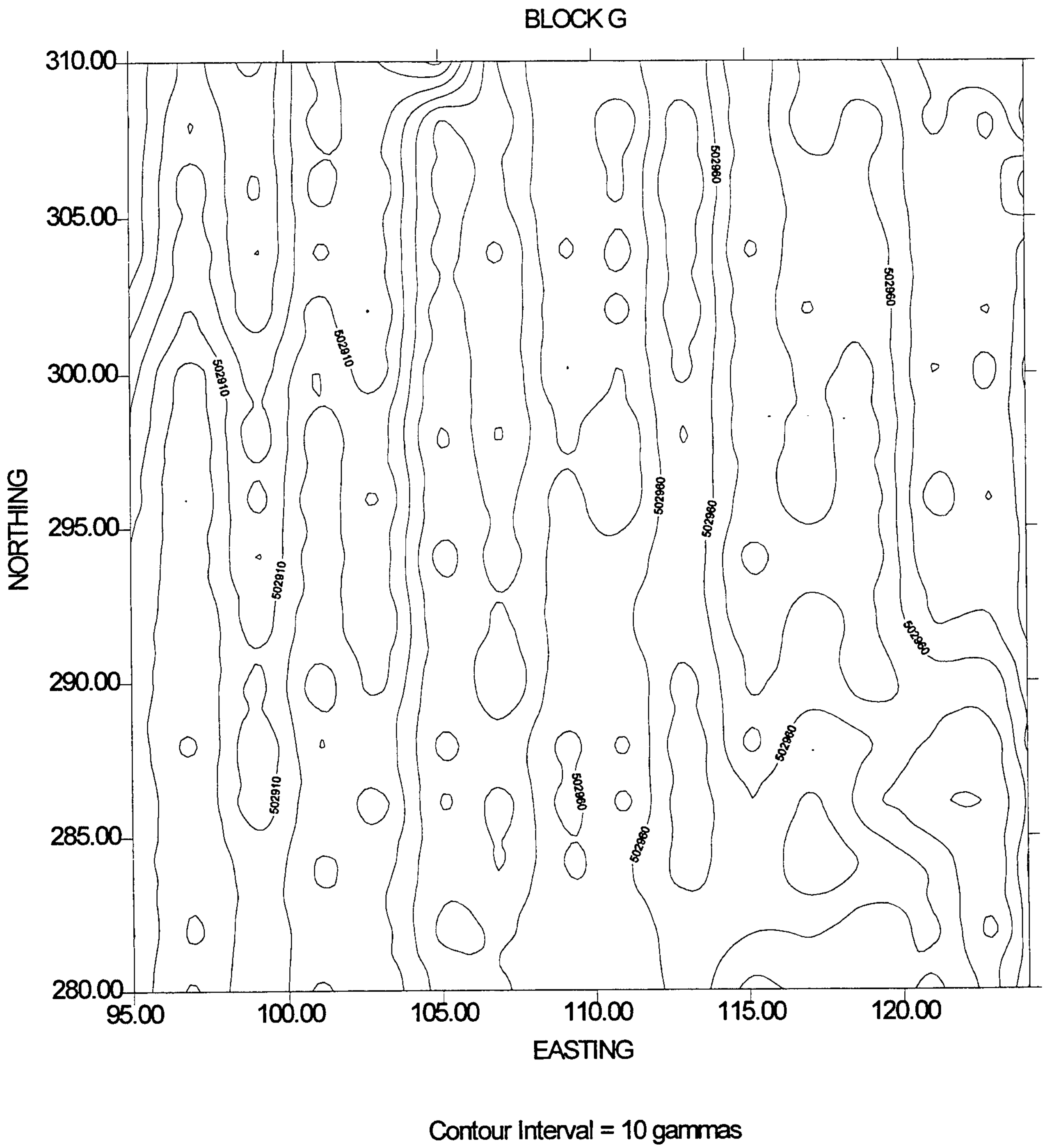


Figure 61. Magnetic contour plan of Block G.

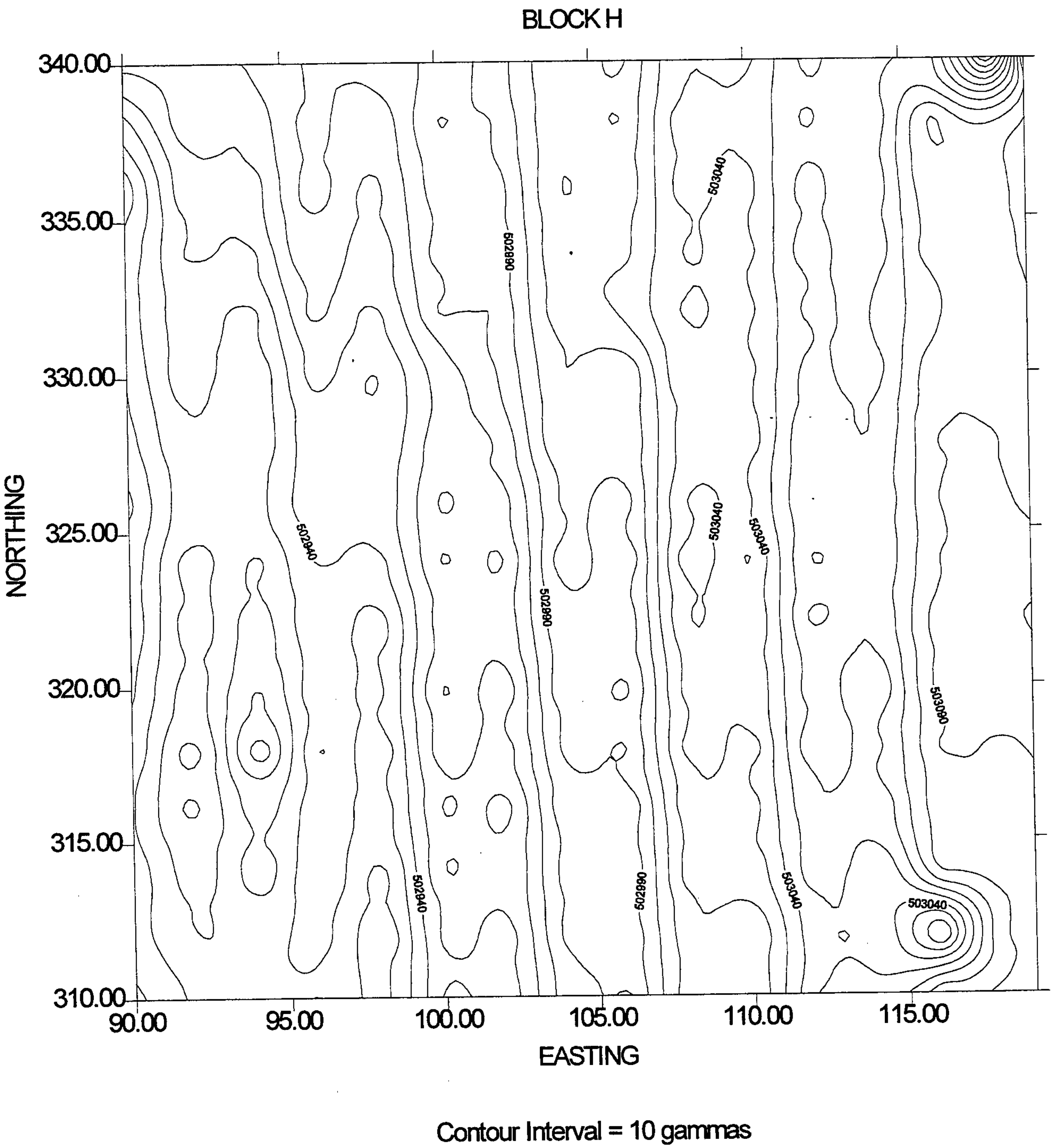


Figure 62. Magnetic contour plan of Block H.

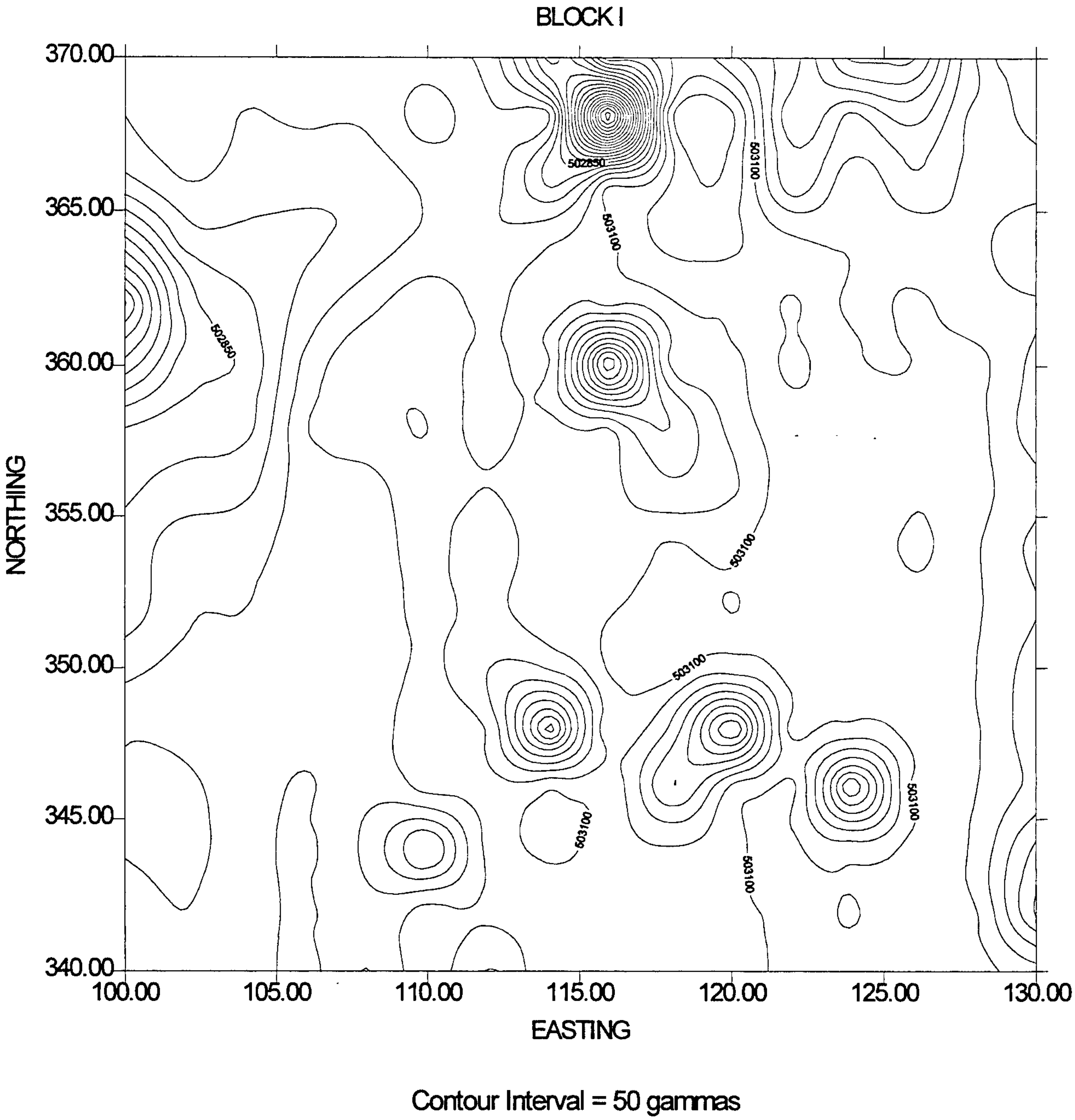


Figure 63. Magnetic contour plan of Block I.

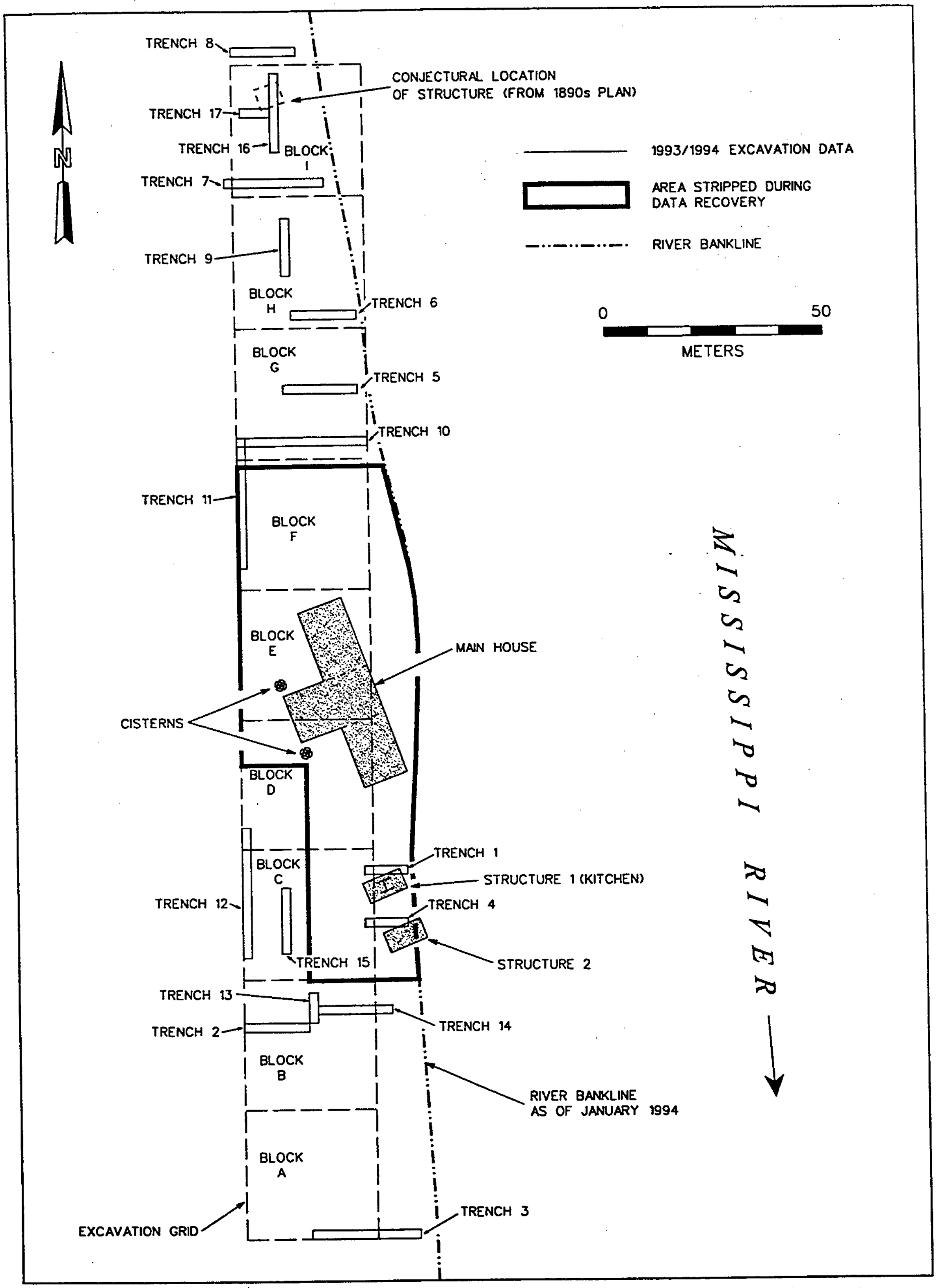


Figure 64. Plan of Nina Plantation (16PC62), showing location of Phase III trenches and excavation blocks.

cubic meters (120,069 cubic feet) of alluvial overburden was removed from Blocks C, D, E, and F (Figure 65). Balks, each measuring 2 m (6.56 ft) in width, were left between excavation blocks, in order to maintain vertical control.

Mechanical stripping and unit excavation took place concurrently. Excavation units were established after the identification and initial recordation of features exposed during the stripping operation. Excavation units were placed to enable the investigation of features, to sample midden deposits, and to characterize the various areas within and on the exterior of identified structures. A total of 251 m^2 (823 ft^2) was hand excavated in 170 units (Figures 66 - 69); the majority of these units measured 1 x 1 m (3.28 x 3.28 ft). If warranted, units were expanded beyond their original size in additional 1 x 1 m (3.28 x 3.28 ft), or 0.5 x 0.5 m (1.6 x 1.6 ft) increments. Twenty-six units measured 1 x 2 m (3.28 x 6.56 ft), ten measured 2 x 2 m (6.56 x 6.56 ft), two were 1.5 x 1.5 m (4.9 x 4.9 ft), six were 1.5 x 2 m (4.9 x 6.56 ft), two were 1.5 x 2.5 m (4.9 x 8.2 ft), and one was 3 x 3 m (9.8 x 9.8 ft). Larger units were designated with a single unit number, but were controlled in smaller 1 x 1 m (3.28 x 3.28 ft) segments. A list of all excavated units, including grid coordinates, size, and the rationale for excavation can be found in Appendix I.

A total of 216 features were investigated during data recovery at Nina Plantation (16PC62) (Figure 70 - pocket). Features were numbered consecutively from one to 256; 40 of these eventually were re-classified as either non-cultural, or redundant. Redundant feature numbers were the result of the recordation of linear features in more than one unit; these redundant feature numbers were deleted when later investigation revealed separate exposures of a single feature. A list of all features is provided in Appendix I.

In addition, 17 trenches, totaling 297 linear m (974 linear ft) were excavated; the average width of these trenches measured 1.5 m (5 ft), providing a total area of 445.5 m (1461.6 ft) of exposure. The placement of these trenches was intended to allow investigation of the site stratigraphy, to provide information about areas of the project area not included in the block excavations, and, in some cases, to allow investigation of large landscape features (Figure 64). A list of all trenches, their lengths and coordinates, and the reasons for their excavation is contained in Appendix I.

Site Stratigraphy

Anticipated Soils and Stratigraphy

The soils in the area of Site 16PC62 are ascribable to the Robinsonville series, as mapped by the United States Department of Agriculture, Soil Conservation Service (Powell et al. 1982). Robinsonville soils are mainly located on the batture side of the levee along both the Mississippi and the Atchafalaya rivers. They are among the youngest soils in the region, having developed in the most recent loamy and sandy alluvium. They are well drained, moderately permeable, and they often are associated with soils of the Commerce series. The A horizon has a hue of 10YR, and ranges in value between 3 and 5; chroma ranges between 2 and 4. The C horizons have a hue of 10YR, a value between 4 and 6, and a chroma of 2 to 4 (Powell et al. 1982).

A typical profile of Robinsonville silt loam consists of a 0 to 15.24 cm (0 to 6 in) dark grayish brown (10YR 4/2) silty loam A1 horizon, overlying a dark brown (10YR 4/3) silt loam C1 horizon, extending to 30.48 cmbs (12 inbs). The C2 horizon is a brown (10YR 5/3), very fine sandy loam that extends to 55.88 cmbs (22 inbs); it commonly contains strong brown (7.5YR 5/6) stains along root channels. The C3 horizon consists of a pale brown (10YR 6/3), very fine sandy loam that extends to 93.98 cmbs (37 inbs). The C4 horizon, extending to 152.4 cmbs (60 inbs), is typically a pale brown (10YR 6/3) loamy, very fine sand, with a few fine, distinct yellowish brown mottles. All of these C horizons exhibit thin bedding planes, and clear, smooth boundaries. A buried A horizon may be present below 50.8 cmbs (20 inbs) (Powell et al. 1982:48).

Robinsonville soils are slightly acid to moderately alkaline, and they occasionally are flooded for brief to long periods of time between January and April. The high water table in these months ranges from 1.22 to 1.82 m (4.0 to 6.0 ft) below surface. These soils are well suited to pasture or short season crops and to hardwoods, but because of flooding, crops may sustain seasonal damage (Powell et al. 1982:21).

Figure 65. Aerial view of excavations at Nina Plantation, showing Blocks C - F (courtesy of the Army Corps of Engineers, New Orleans District).

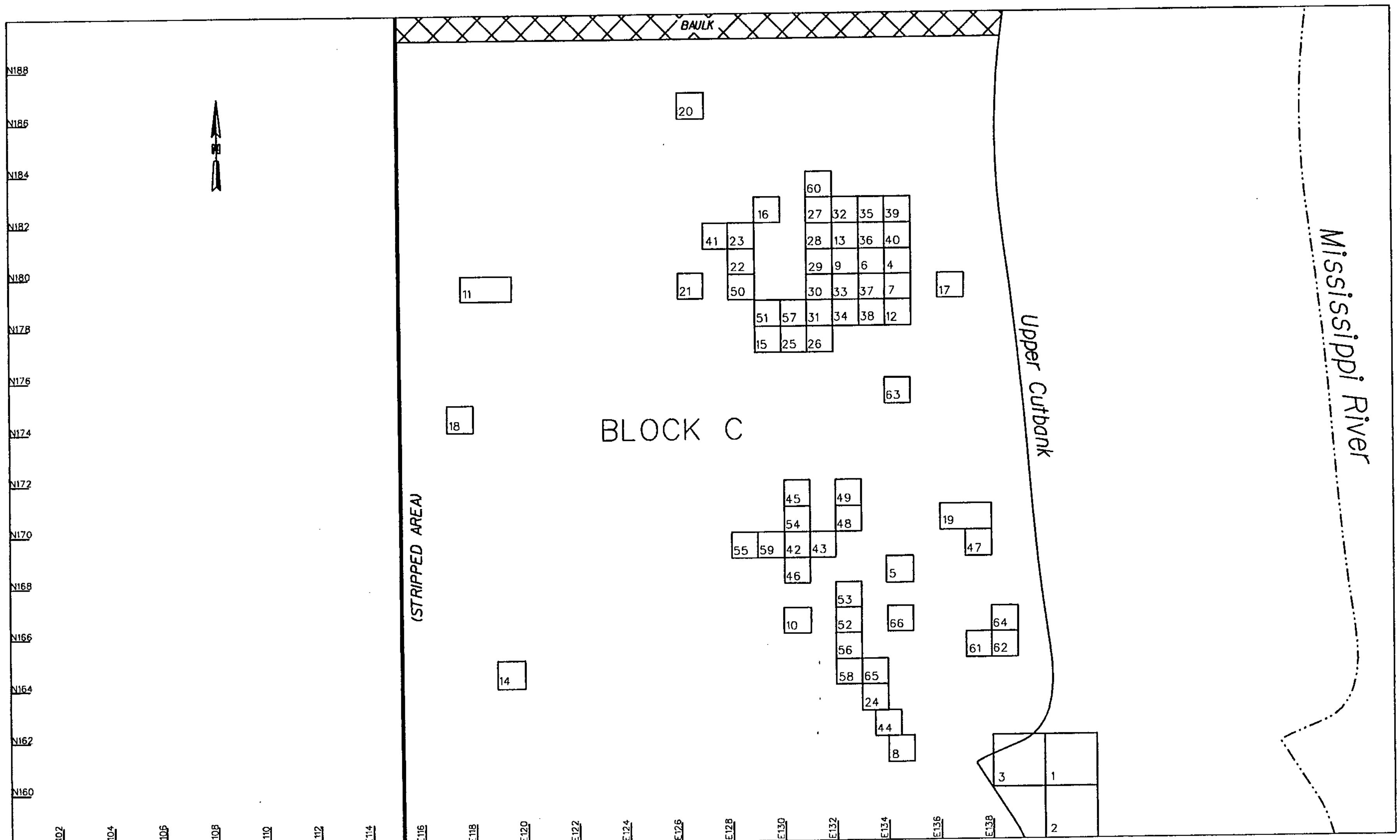


Figure 66. Plan view showing location of all units excavated in Block C.

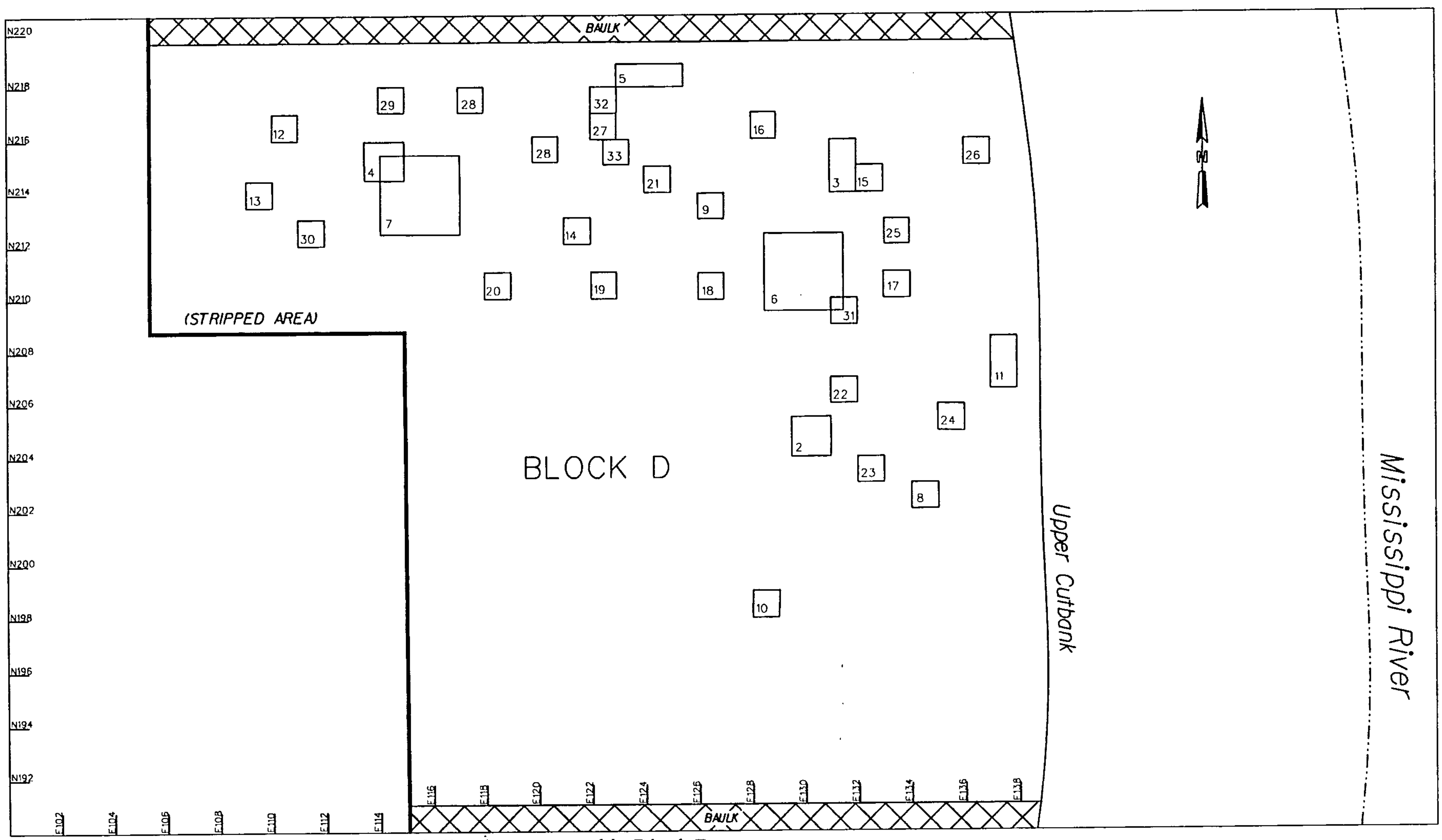


Figure 67. Plan view showing location of all units excavated in Block D.

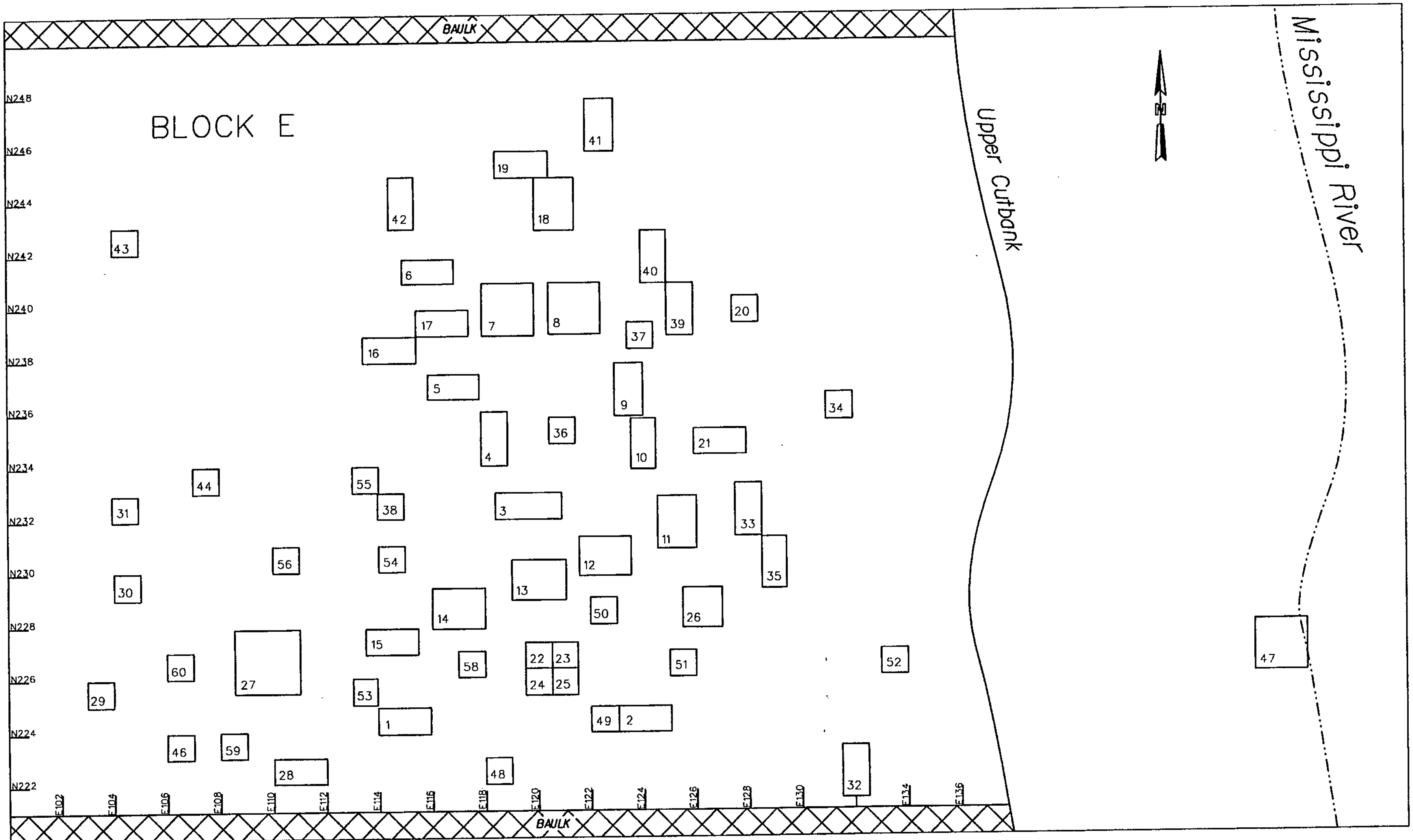


Figure 68. Plan view showing location of all units excavated in Block E.

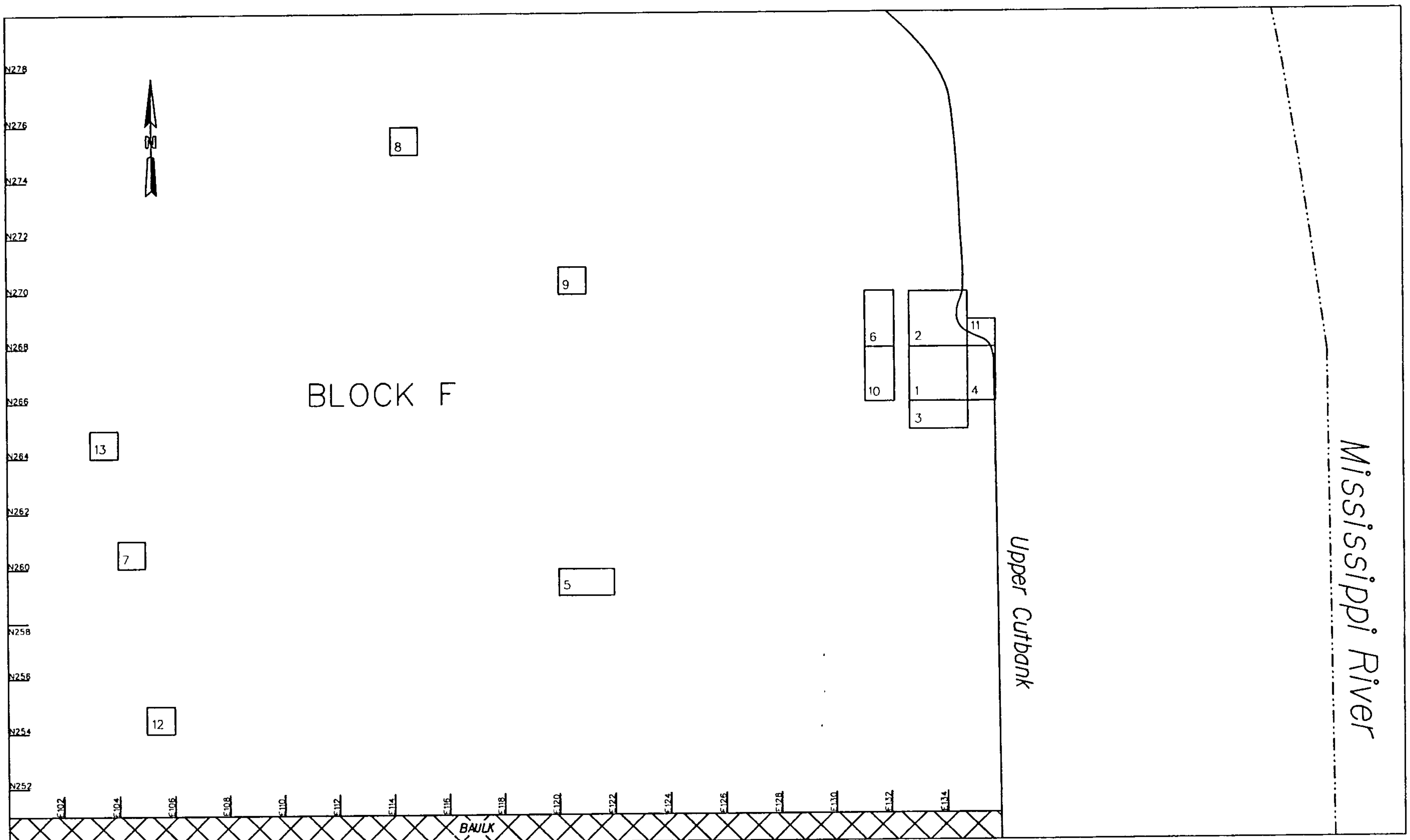


Figure 69. Plan view showing location of all units excavated in Block F.

Observed Stratigraphy

At the Nina Plantation site, the unnamed fluvial alloformation, of which Meander Belt No. 1 is the surface, consists of 36 to 40 m (118 to 130 ft) of meandering river deposits. Three to 9 m (10 to 30 ft) of point bar deposits are buried by approximately 3 m (10 ft) of natural levee sediments that have been emplaced over the last 3,000 years. During the Phase III field studies at Nina Plantation, four distinct soil packages were identified (Figure 71). The uppermost package (Soil Package 1) consists of a 50 cm thick wedge of recent rhythmic overbank deposits which extend from the ground surface to the top of Middle Soil Package II (Figure 72).

Middle Soil Package II extends from 50 cm (19.7 in) below ground surface to a depth of 1 m (3.28 ft) below ground surface. The base of Middle Soil Package II is marked by the occurrence of the 1Ab horizon, or Midden I (ca. 1852-1890). Unlike overlying Soil Package I, the four incipient Abg horizons that comprise the Midden II sola are strongly gleyed and mottled, indicating periods of extended water saturation. Each of the four incipient gleyed and mottled A-horizons are bound above and below by well-sorted sands (C-horizons). These A-C couplets clearly represent individual autogenic flood events on the natural levee (Figure 73). The emplacement of this soil package took place during the period 1890-1927, when the man-made levee was reconfigured and moved further to the west. Movement of the levee to the west would have allowed for standing water conditions in the vicinity of the Nina Plantation site, so that the site was bound by the river channel to the east and by the reconfigured levee to the west.

Soil package III consists of approximately 2 m (6.6 ft) of late Holocene age vertical accretion deposits that are underlain by a layer of coarse grained gray sands that were emplaced through active lateral accretion during the early development of Meander Belt No. 1, at roughly 3000 yrs. B.P. Midden I marks the top of Soil Package III; it is underlain by a thin sandy loam C horizon (Figure 74), which separates it from underlying Midden II (2Ab). Midden II likely dates from roughly 1820 to 1851, when a large flooding event buried this horizon. Subsequent flood plain stability ensued for a period of roughly 40 years (ca. 1852-1890), at which time the 1Ab soil (Midden I) developed. As noted above, development of the 1Ab/Midden I horizon was stopped by a large flood event and by the emplacement of Soil Package II.

The multiple, stacked sola that comprise Soil Package III, and which underlie the Midden II soil, document periods (several hundred years) of relative stability that then were interrupted by large flood events that capped the developing cumulic A horizons. These flood events clearly resulted from large cyclonic storms that emplaced, on average, 40 cm (15.7 in) of overbank sediments on the natural levee (Figure 75). Emplacement of all of Soil Package III took place between the period 3000 and 175 yrs. B.P.

Soil Package IV was noted only along the cut-bank of the active river channel at the site; it presently lies at the normal pool of the river. These sands mark the top of lateral accretion deposits of Meander Belt No. 1.

General Site Stratigraphy

While the soil stratigraphy of the entire 4 m (13.1 ft) package on the levee at the site is quite complex, only the three strata that comprise the historic deposits related to the occupation of Nina Plantation need to be described in detail. These strata included two incipient A horizons separated by a thin loamy C horizon, and underlain by a cambic (subsoil) Bw horizon. It should be noted that Stratum I consisted of approximately 1 m (3.3 ft) of recent alluvial overburden that was removed prior to hand excavation. The strata described below are representative of those encountered throughout the site.

Late Midden

The late midden (1852-1890) and destruction debris were encountered immediately below Stratum I. Horizontally, the late midden was discontinuous across the excavated portion of the site, but it was most evident in the immediate vicinities of the structures. This horizon was disconformably overlain by a thin sand horizon (9C) (Figure 71) that was deposited as a result of a large flood event during the early 1890s. The late midden is conformably underlain by a loamy C horizon, which disconformably overlies the earlier midden horizon. Deposition of the intervening C horizon has been established at the year 1851.

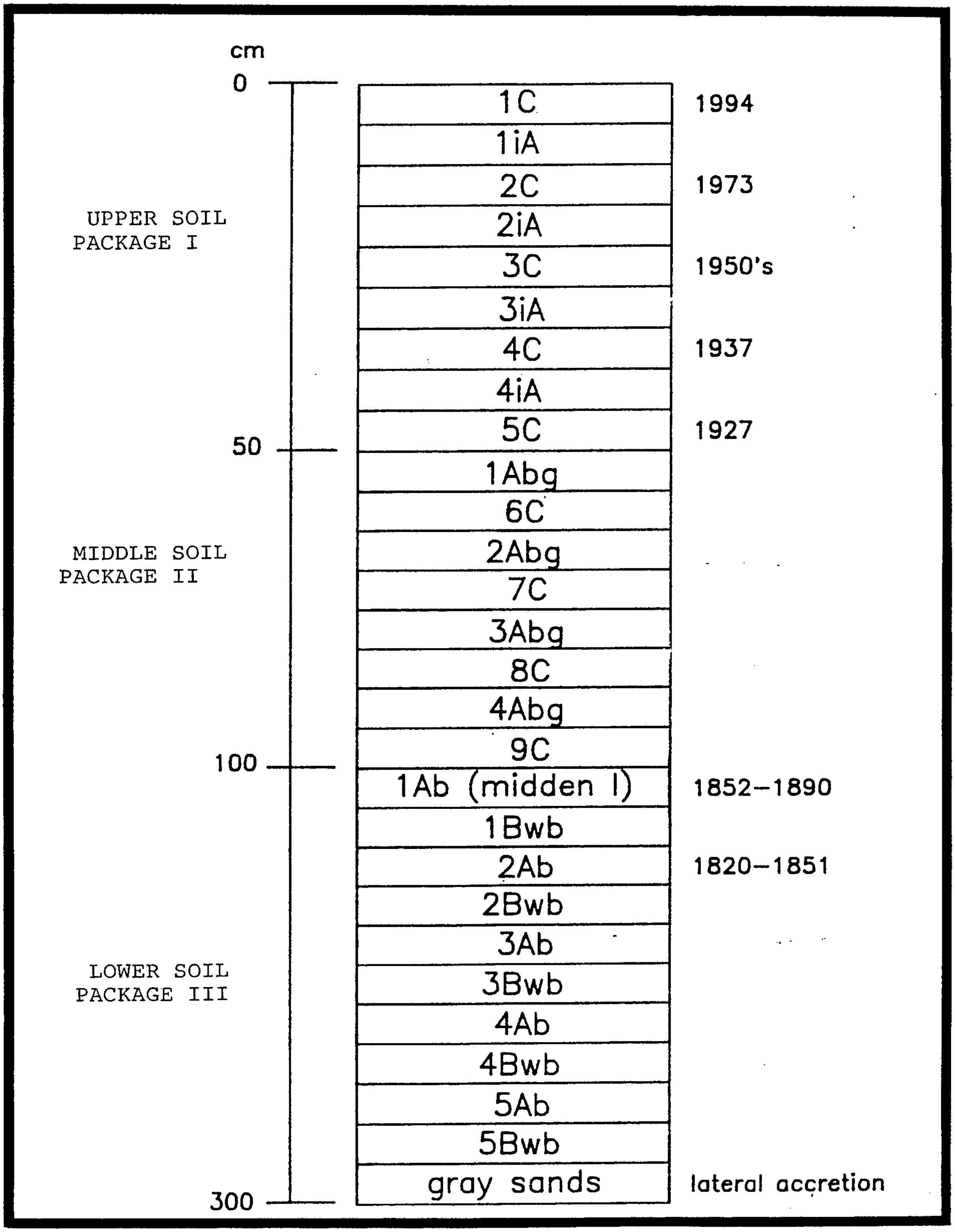


Figure 71. Cross section of combined soil packages identified at Nina Plantation.

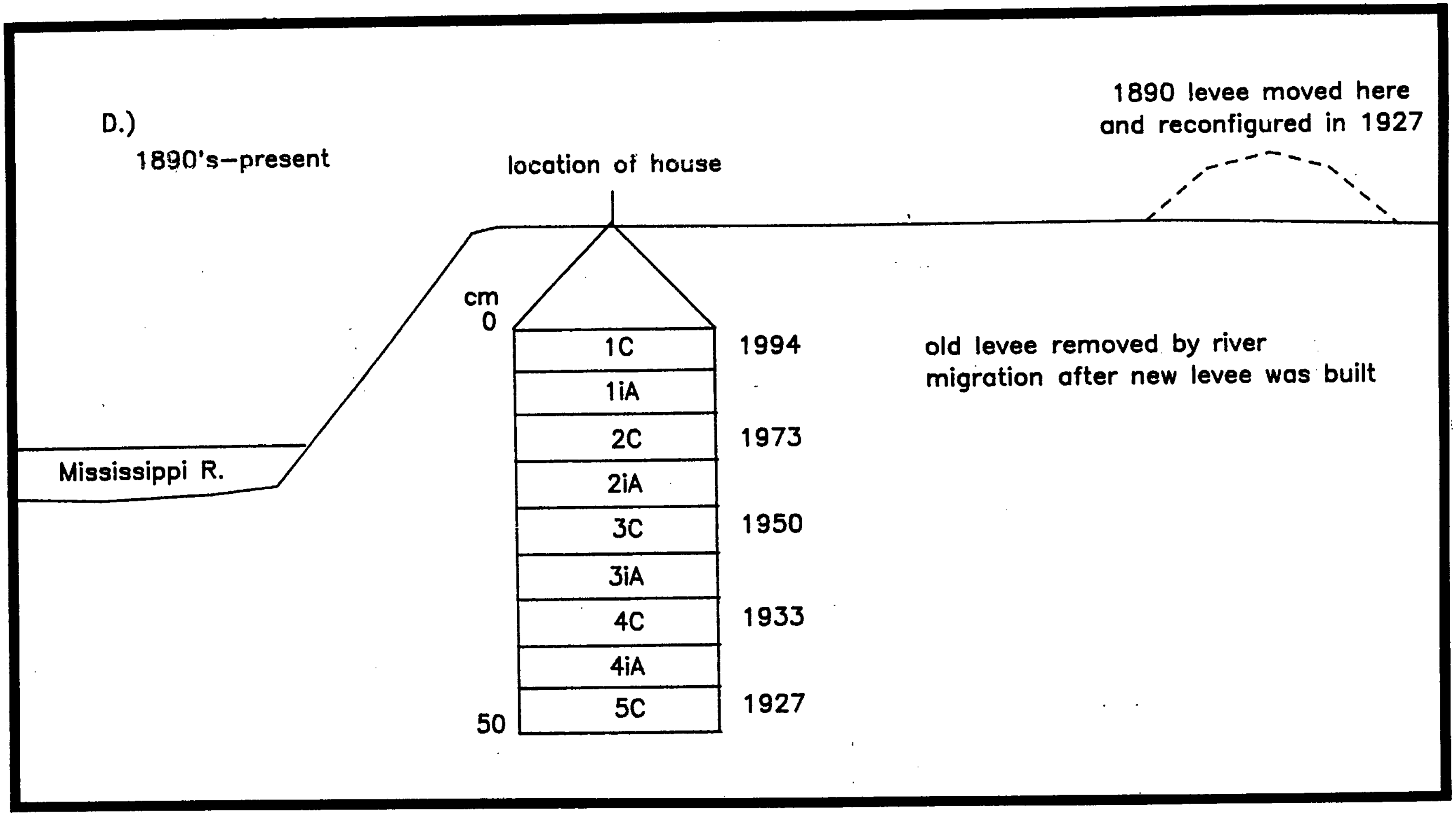


Figure 72. Geologic cross section of upper soil package identified at Nina Plantation.

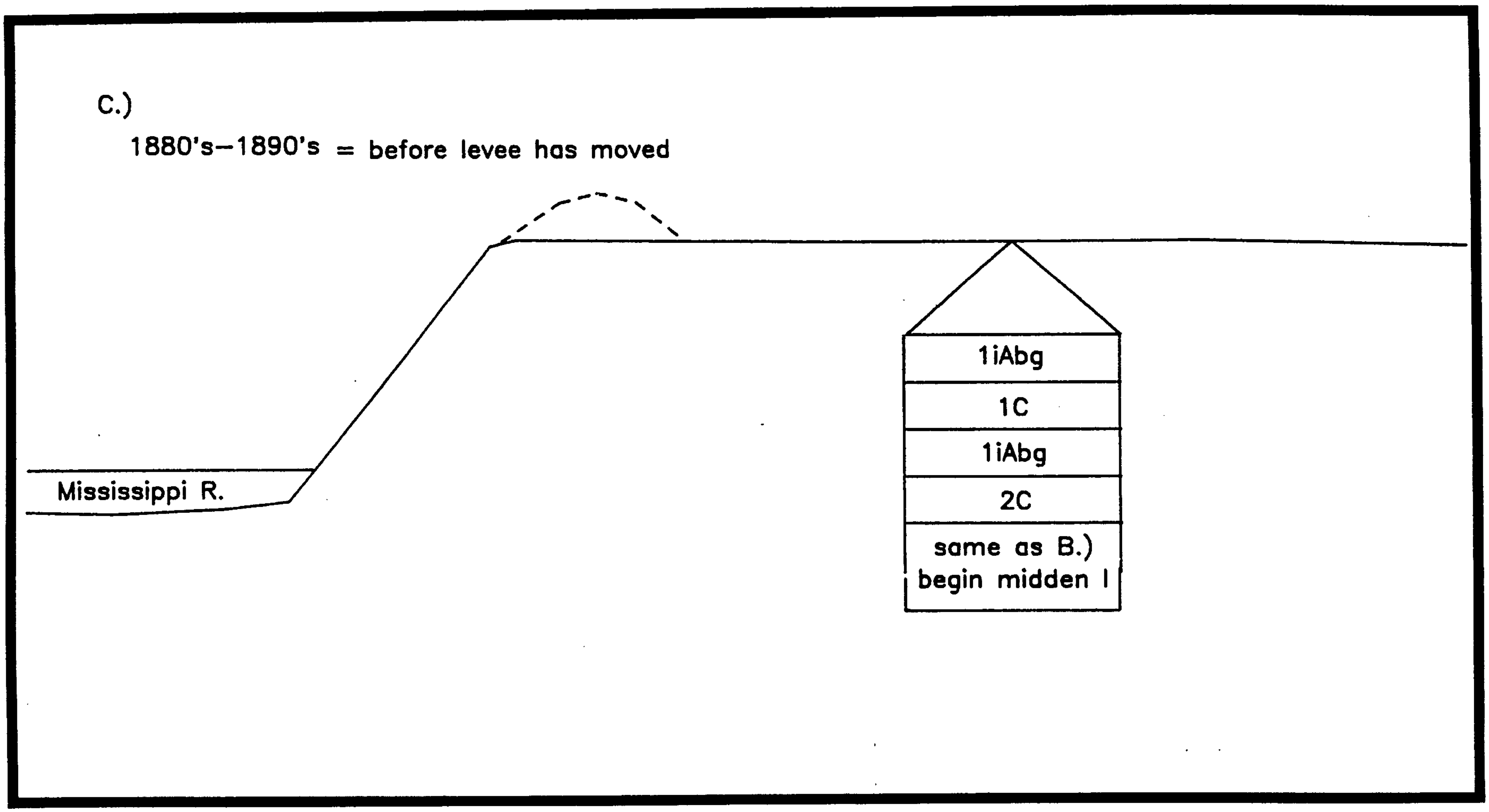


Figure 73. Geologic cross section of middle soil package identified at Nina Plantation.

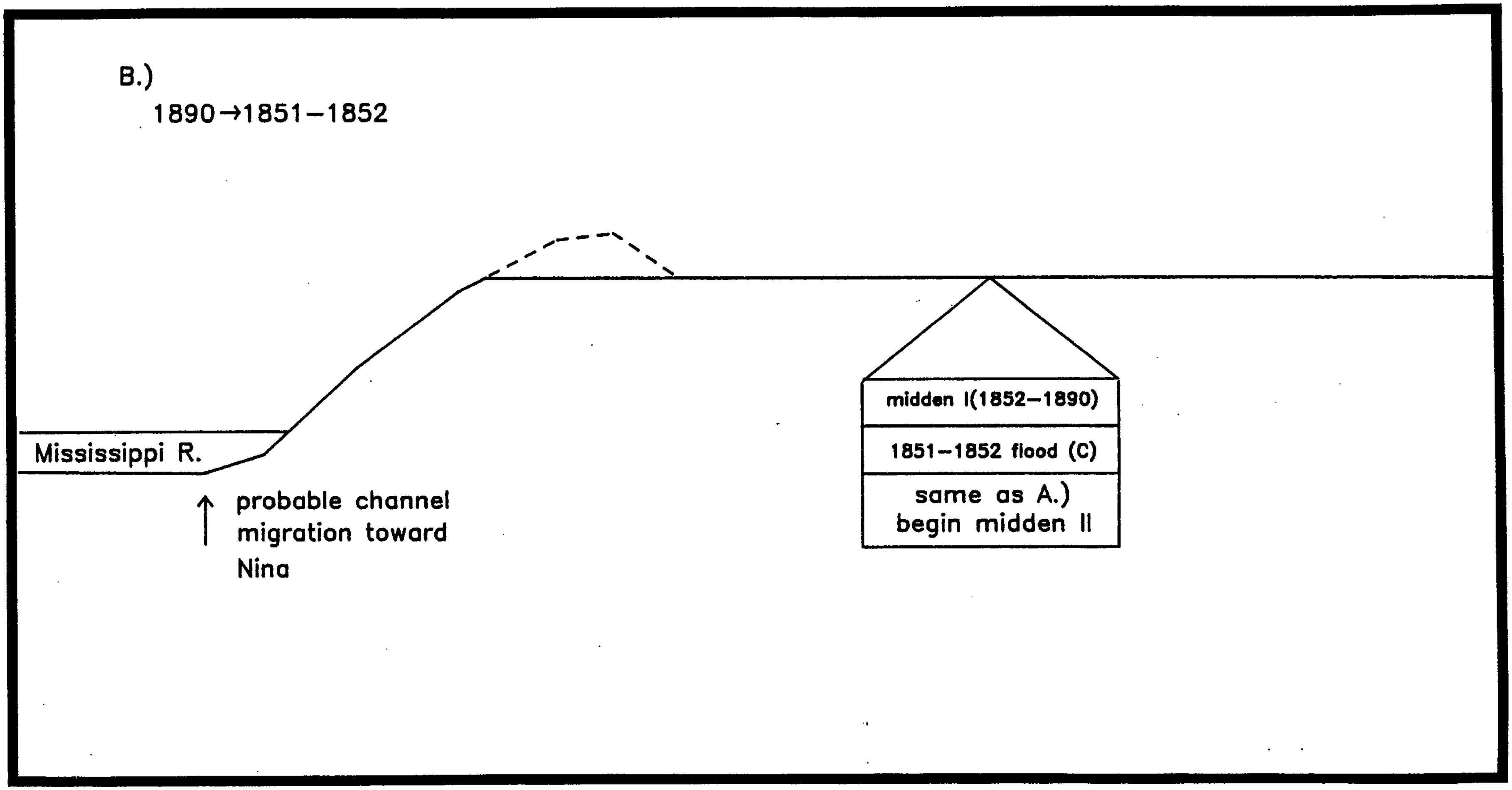


Figure 74. Geologic cross section of lower soil package identified at Nina Plantation:

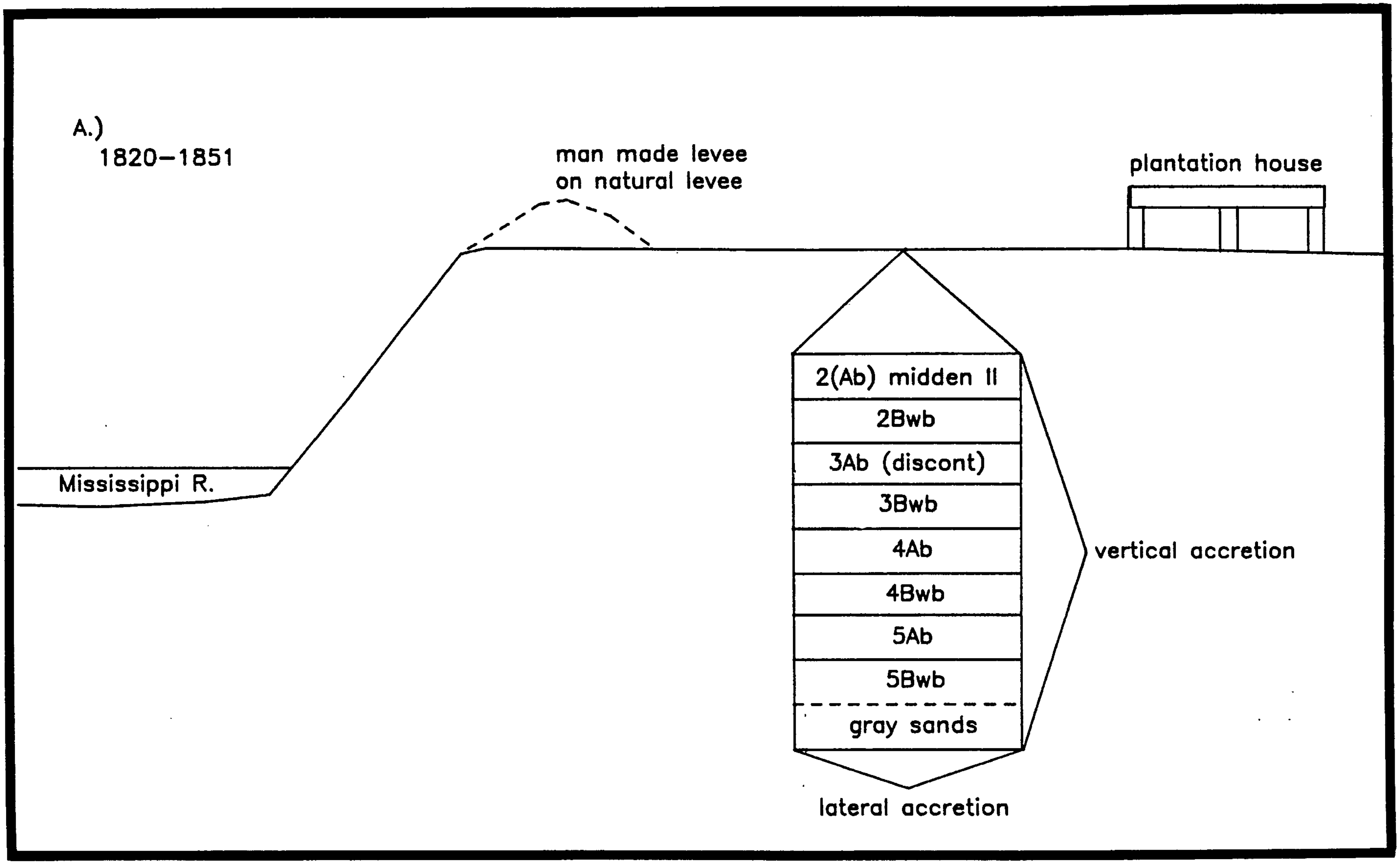


Figure 75. Geologic cross section of lower soil package identified at Nina Plantation, showing the deposition of overbank sediments on the natural levee.

The latest midden can be classified texturally as a silt loam; it displayed moderate bioturbation, and it was weakly acidic. In addition, this stratum contained a moderate amount of organic materials. Grain size distributions displayed a primary mode in the <4 phi (0.063 mm) size class, while the mean grain size for late midden was 4.40 phi. Two weak secondary modes occurred at 4 phi (0.063 mm) and at -2 phi. The grains comprising the coarser sediments at -2 phi were primarily wood, carbon, small pieces of bone, and ceramic fragments associated with historic occupation of the site. The standard deviation value for the latest midden is 3.66, indicating generally poor sorting under low energy conditions. The skewness value is -0.286, indicating a tail trending toward the coarser grain sizes.

1851 Alluvial Deposit (C1/Bwb)

The 1851 Alluvial Deposit was emplaced as a result of a single flood event that was responsible for capping the early midden deposits at the site. Horizontally, the alluvial deposit was relatively continuous across the excavated portion of Site 16PC62, although its depth varied in the immediate vicinity of the structures. The stratum lay disconformably above the early midden, and conformably below the late midden.

The 1851 Alluvial Deposit can be classified texturally as a coarse silt loam; it displayed moderate bioturbation, and it was weakly acidic. In addition, the stratum displayed a minimal amount of organic materials. This alluvial deposition contained more than twice the amount of fine sand as the cultural bearing horizons at the site. The mean grain size for this alluvial deposit was 4.7 psi, and the skewness value was -0.266, indicating a slight tail trending toward the coarser grain sizes. The standard deviation value for the 1851 Alluvial Deposit is 0.833, indicating moderate sorting of the sediments during its emplacement by flood waters.

Early Midden

The early midden (1820-1851) represents the earliest historic occupation of the site. Horizontally, the early midden was discontinuous across the excavated portion of Site 16PC62, but it was most evident in the immediate vicinities of the structures. The early midden was disconformably overlain by the 1851 Alluvial Deposit, and conformably underlain by the subsoil horizon (Stratum V) at the site.

Like the overlying latest midden, the early midden was an organic, rich silt loam horizon displaying a moderate amount of bioturbation; it was weakly acidic. The mean grain size for the earliest midden was 4.95 phi. The primary modal peak occurred at less than 4 phi, and the horizon was strongly unimodal with over 95 percent of the grains occurring in the silt and clay sized fraction. The standard deviation value for the early midden was 0.811, indicating moderate sorting. The skewness value was -0.65, indicating a tail trending toward the coarser grain sizes. The sediments that comprised both the late midden and the early midden indicate a leptokurtic character for these strata.

Site Taphonomy

The action of the Mississippi River has had a profound effect on Site 16PC62 (Nina Plantation). Severe erosion along the Mississippi River batture during the twentieth century has seriously impacted the project area. Based on historic maps, as much as 100 m (328 ft) of the site has been claimed by the river; artifacts and other cultural debris were abundant along the cutbank in the project area. In areas of the site not yet affected by erosion, the impact of the river has been limited to the relatively rapid deposition of a thick, fluvial overburden during the twentieth century. While creating logistical problems for excavation, this approximately meter-thick deposit minimized impact to the site from other potentially damaging activities.

There was little evident disturbance to cultural stratigraphy due to agricultural or logging activities. The bases of postmolds from post-occupation fencing were visible in the lowest levels of overburden in Block F, and plowscars were apparent in the alluvium removed from Block D. These post-occupation activities caused little or no impact to the nineteenth century soils. In Block C, excavation of drainage channels during the early twentieth century caused moderate disturbance to the most recent cultural stratum in Block C; this stratum consisted of sheet refuse distributed during and after the dismantling/destruction of the buildings in that area of the site.

The low acidity of the soils aided preservation of bone, molluscan, and other organic matter at the site. Rather than causing negative impact to the site, periodic episodes of flooding, coupled with moderate permeability of the soils, tended to preserve the cultural stratigraphy,

Definition of Components at Site 16PC62

Architectural Components

Data recovery excavation at 16PC62 revealed two major architectural components deriving from the nineteenth century occupation of Nina Plantation. Features related to the owner's house were located in Blocks D and E; these are referred to herein as the Main House complex. Features associated with a small complex of outbuildings near the main house were located in Block C; these are referred to as the Outbuilding complex (Figure 70).

While the artifactual evidence indicated that both complexes were domestic in nature, and roughly contemporaneous, the two architectural components revealed major differences in architectural materials, construction methods, and spatial layout. These differences are indicative of the relative social and economic positions of the occupants within the plantation hierarchy. While no documentary evidence exists that specifically identifies the occupants of the two structural complexes, it is likely that the main house complex was constructed for the use of the plantation owners, beginning with Jean Jarreau ca. 1820, and including the Allen family who took possession in 1857 (see Chapter IV). The Outbuilding complex included two structures, referred to as Structures 1 and 2. Structure 1 has been interpreted as a detached kitchen and dwelling. While domestic artifacts recovered from Structure 2 suggest that it was used as a dwelling, any additional functions remain unidentified. The occupants of these structures are likely to have been household servants assigned to tasks associated with the upkeep and maintenance of the main house and its occupants. In 1857, six slaves were assigned domestic duties; the kitchen (Structure I) probably was occupied by Jenny, listed in the Jarreau estate as a cook (see Chapter IV).

The Main House Complex

For analytical purposes, the Main House complex has been divided into five areas; these include the *core*, the *south wing*, the *north wing*, and the *north and south cisterns* (Figure 76). The *core* refers to the central, rectangular section of the structure, constructed ca. 1820 by Jean Ursin Jarreau (see Chapter IV), the original owner of the plantation. The *south wing* appears to have been constructed during the same time period as the *core*, but it was attached as a wing at a later time. The *north wing* was an even later addition to the original core structure, probably postdating the sale of the estate to C.W. Allen in the 1850s. The Main House complex also included the *north cistern,* at the northwestern corner of the core, and the *south cistern,* located at the southwestern corner of the core (Figure 76). These large water storage tanks were of wooden construction, supported on brick piers.

The configuration of the main house was defined by brick foundation piers (Figure 76) constructed on approximately 2.84 m (9.3 ft) centers. Based on the distribution of brick piers, the core of the main house measured 11.14 x 18.75 m (36.5 x 61.5 ft). The dimensions of the south wing (after attachment as a wing) were 8.06 x 14.77 m (26.4 x 48 ft), and the north wing measured 8.18 x 14.77 m (26.8 x 48 ft). Galleries on the river (eastern) sides of the south and the north wings measured 3.06 m (10 ft; south wing) and 2.95 m (9.69 ft; north wing) in width, and they ran the length of each wing. The core may have had galleries of a similar width on all sides. Each cistern foundation was approximately 1.81 m (5.96 ft) in diameter (Figures 70 and 76).

The Outbuilding Complex

The Outbuilding complex was contained within Block C of the excavated portion of the site (Figure 64). As noted above, the remains of two buildings included in the Outbuilding complex were designated Structures 1 and 2 (Figure 70). Structure 1 was marked by the remains of a substantial H-shaped chimney foundation (Feature 116), which had been constructed on top of the remains of an earlier chimney and hearth made of wood and clay. Both outbuilding structures were of earthfast construction, and they incorporated both ground-laid sills and post-in-ground techniques. These structures appear on an 1883 MRC chart showing Nina Plantation as two of four small structures just south of the main house (Figure 54).

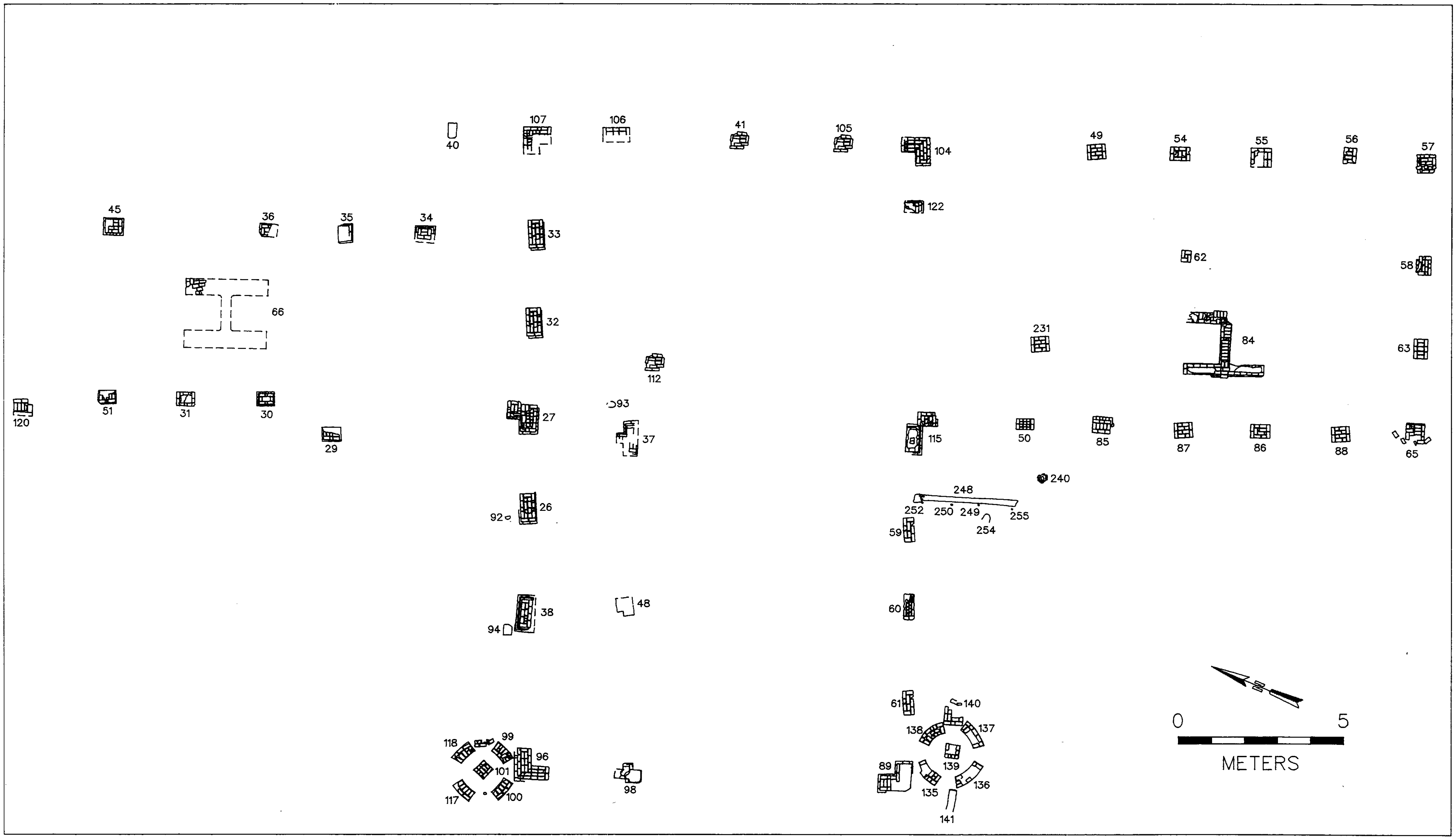


Figure 76. Plan view of the Main House at Nina Plantation, showing the central core, as well as the north and south wings of the structure.

Based on analysis of recovered artifacts, both Structures 1 and 2 served in domestic capacities; Structure 1 also served as a kitchen. Although portions of Structure 1 had been lost to erosion, its dimensions were estimated at approximately 4.9 x 9.8 m (16 x 32 ft). The remains of Structure 2 were more ephemeral, and it was more difficult to estimate its dimensions, although they appeared similar to those of Structure 1.

Unassociated Features

In addition to the features comprising the Main House complex and the Outbuilding complex, a number of features were identified and investigated during mitigation at Nina Plantation. Although it is certain that these features were associated with the occupation of the site, they could not be clearly related to specific structures or activities.

These isolated components included Features 52 and 53, two shallow, oval pits at the northern and the western edges of Block F (Figure 70). Also excavated was Feature 43 in Block F (Figure 77). At the time of excavation, this feature was rapidly eroding into the rising waters of the Mississippi River. While erosion had erased evidence of the original configuration of the feature, it appeared to have been a natural concavity (such as a tree fall) that had been used for secondary disposal.

Another shallow, oval pit (Feature 90; Figure 70) was excavated in Block D, west of the Main House complex. Again, the few artifacts recovered offered little aid in assigning a date to this feature, and it was not directly associated with any structures.

In Block E, extremely low water depths in the river enabled the recordation and excavation of a well-preserved, wood-lined well shaft (Feature 194; Figure 70). This well probably was associated with the Main House complex, but the lack of diagnostic materials precluded assignation of temporal position.

Finally, a number of features postdating the occupation of Nina Plantation were recorded. The most notable of these were Features 14, 18, and 19, a complex of a low levee (Feature 14) and adjacent ditches (Features 18 and 19) that crossed Blocks C and D (Figure 70). The levee had been constructed on top of debris from the destruction of the south wing of the main house, and it had been built with the use of midden soils from the areas of both the south wing of the main house and the outbuildings.

Unassociated Midden Deposits

A number of cultural midden deposits were located during mitigation excavations at Site 16PC62 (Nina Plantation). While the majority of these deposits were directly associated with either the Main House complex or the Outbuilding complex, one area of concentration was noted during excavation in Block F. This area, investigated in Unit F/5, also included a trench-like feature (Feature 130; Figure 77). Excavation efforts recovered a concentration of oyster shell, as well as a number of early nineteenth century ceramics. As in the case of Feature 43, it was not possible to associate this midden deposit with any known structures or activities; it is likely that Block F represents an area of early trash disposal, away from the main house.

The Main House Complex

The Main House complex included the core structure, the south wing, the north wing, two cisterns, and midden deposits associated with these structures. The configuration of features in the Main House complex, and the associated stratigraphy, are discussed below.

The Core Features

The core of the main house, located in Blocks D and E, appeared to have been built as the original structure in this area. Twenty-one substantial brick piers that raised the building above grade were excavated during mitigation (Figures 70 and 76). Three of these were internal support piers. Twenty-eight units in Block E, and 11 units in Block D, with a total area of 69 square meters, were excavated in the core area of the main house (Figures 67 and 68). These excavations permitted description of the pier features, in addition to investigation and characterization of the stratigraphic sequence in this area.

The corner piers of the core (Features 89, 96, 104, and 107) were L-shaped, with between four and seven courses of stepped brickwork remaining (Figures 78, 79, 80, and 81). The piers that supported the east-west walls of the core (Features 38, 26, 27, 32, 33, 61, 60, 59, 115, and 122)

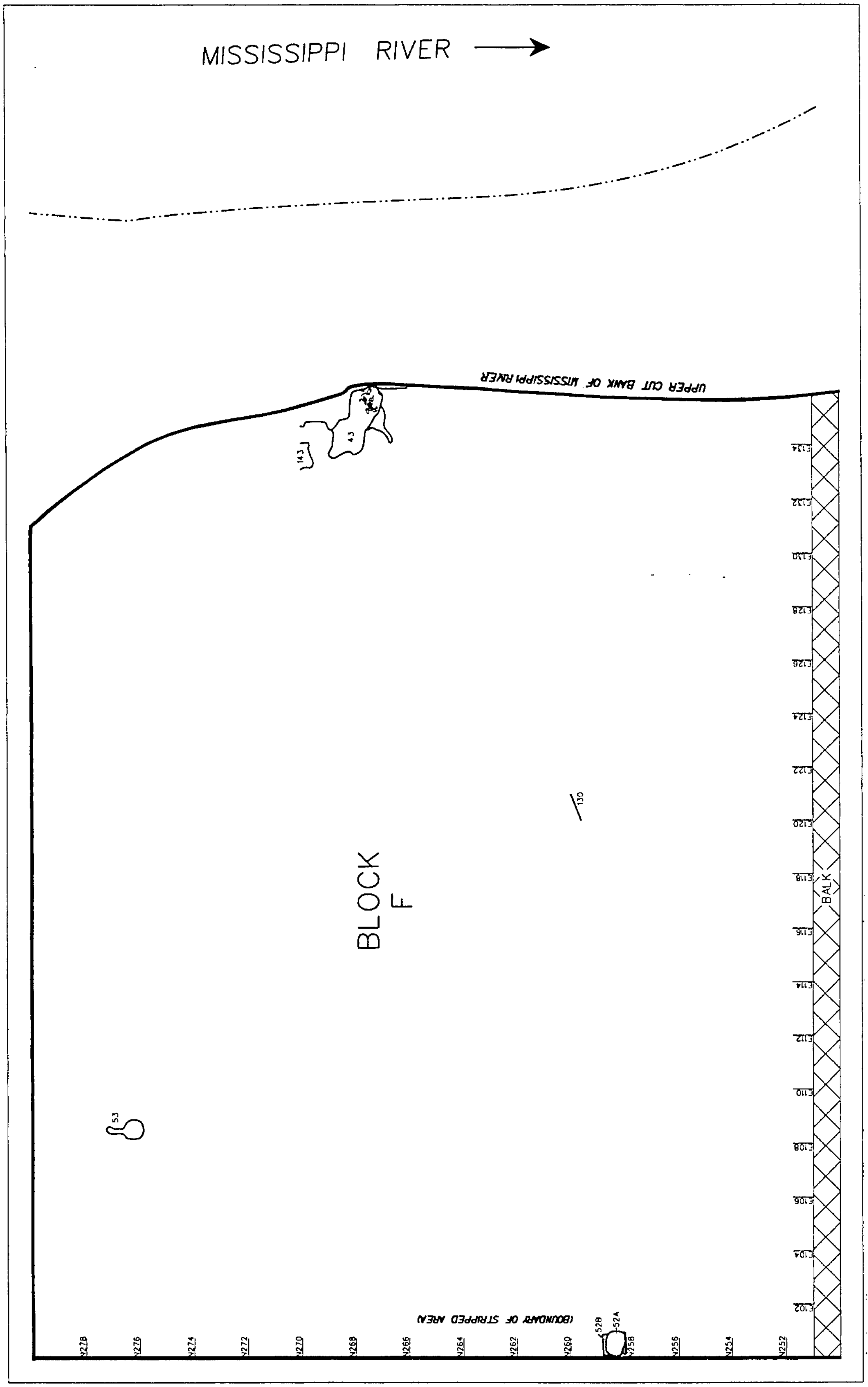


Figure 77. Plan of all features located in Block F.

were rectangular; they were spaced on approximately 2.84 m (9.3 ft) centers. The piers measured approximately 0.3 x 0.8 m (0.99 x 2.68 ft) on the upper course, and widened to 0.5 x 1.1 m (1.6 x 3.6 ft) at the base (Figure 82). The interior piers were less substantial, and their shapes reflected the configuration of the beams of the structure, ranging from L-shaped (Feature 48), to T-shaped (Features 98 and 37), to square (Feature 112). The elevations of the tops of the piers ranged from 11.22 m NGVD (Feature 96) to 11.54 m NGVD (Feature 37). Assuming that grade was the upper limit of the cultural debris at the site, the piers had been removed to the top of grade, or just below, at the time of destruction. The bases of the piers were at depths ranging from 10.9 to 11.05 m NGVD, with the majority at approximately 10.95 m NGVD.

Typical Stratigraphy near the Core

The stratigraphic sequence in the core area of the main house approximated the general stratigraphic pattern at the site. In close proximity to the foundation piers, the natural stratigraphic sequence had been disturbed at various times during occupation, but units located away from the structural features of the core exhibited a more uniform stratigraphic pattern.

Unit E/50

Figure 83 presents the west wall profile of Unit E/50, located underneath the core structure, but not adjacent to a pier. This stratigraphic sequence was typical of the area. Stratum I consisted of the alluvial overburden that had been deposited during flooding in 1993-1994. A lens of brick rubble and mortar was attributed to the destruction of the site at the end of the nineteenth century. In other areas of the Main House complex, destruction debris was far denser, and constituted a separate stratum rather than a lens. Stratum II was a layer of cultural debris (late midden). Material recovered from this deposit included nails, iron fragments, ceramics, glass, a tobacco pipestem, fish scales, and bone. Strata III and IV were attributed to the flood of 1851, and totaled 9 to 10 cm (3.5 to 3.9 in) in depth. The artifact density dropped dramatically in these levels, although some metal, glass, ceramic, and bone were recovered from the uppermost portions of this deposit. Unit E/50 was located in an area that would have been underneath the house, presumably affecting the intensity of flooding. Stratum V was a second cultural deposit, or midden. This stratum was characterized by the inclusion of brick dust and chips, giving the soil a reddish hue. Relative to the upper midden, artifact density was moderate; these levels produced metal, glass, ceramics, bone, and a single glass bead. Sterile soil underlay this deposit, at a depth of 11.09 m NGVD; the total depth of this unit was 43 cm (16.9 in).

Unit E/15

A profile of Unit E/15, incorporating Feature 38, a pier in the north wall of the core (Figures 76 and 82), displayed some deviation from the previous stratigraphic pattern. In this unit, the profile was cut across the face of the feature, to illustrate the interaction between the pier and the surrounding soil strata. Stratum I was the post-occupation alluvium, and Stratum II represented the destruction debris. This brick and mortar rubble was denser than in Unit E/50, and was present across the entire unit. The rubble included numerous nails from the destruction of the building. Stratum III was the dense, artifact-rich upper midden deposit dating from the latter part of the nineteenth century. Ceramics, glass (including a perfume bottle), tin cans, nails, furniture hardware, tobacco pipe fragments, hair comb fragments, bone, fish scales, egg shell, scrap iron, and lead were recovered from Stratum III. The soil contained a high charcoal and ash content, in addition to shell and other organic material; it was characterized as a 10YR 4/2 dark gray silty loam. Below this stratum was the alluvial deposit (Stratum IV), resulting from the flood of 1851. This deposit was present only on the west side of the pier, and where it approximately 6 cm (2.3 in) in thickness. A very low density of cultural material, probably originating in Stratum III, characterized this sandy loam layer. Stratum V was an earlier midden deposit, which was characterized by a reddish hue caused by a high content of brick chips. This stratum contained ceramics, nails, glass, and charcoal in moderate density. Feature 94, a post-hole, was apparent at the top of Stratum VI (11.0 m NGVD; Figure 82). The fill in this feature was similar to that of Stratum V, and it contained similar cultural material, suggesting filling of the feature at the same time as

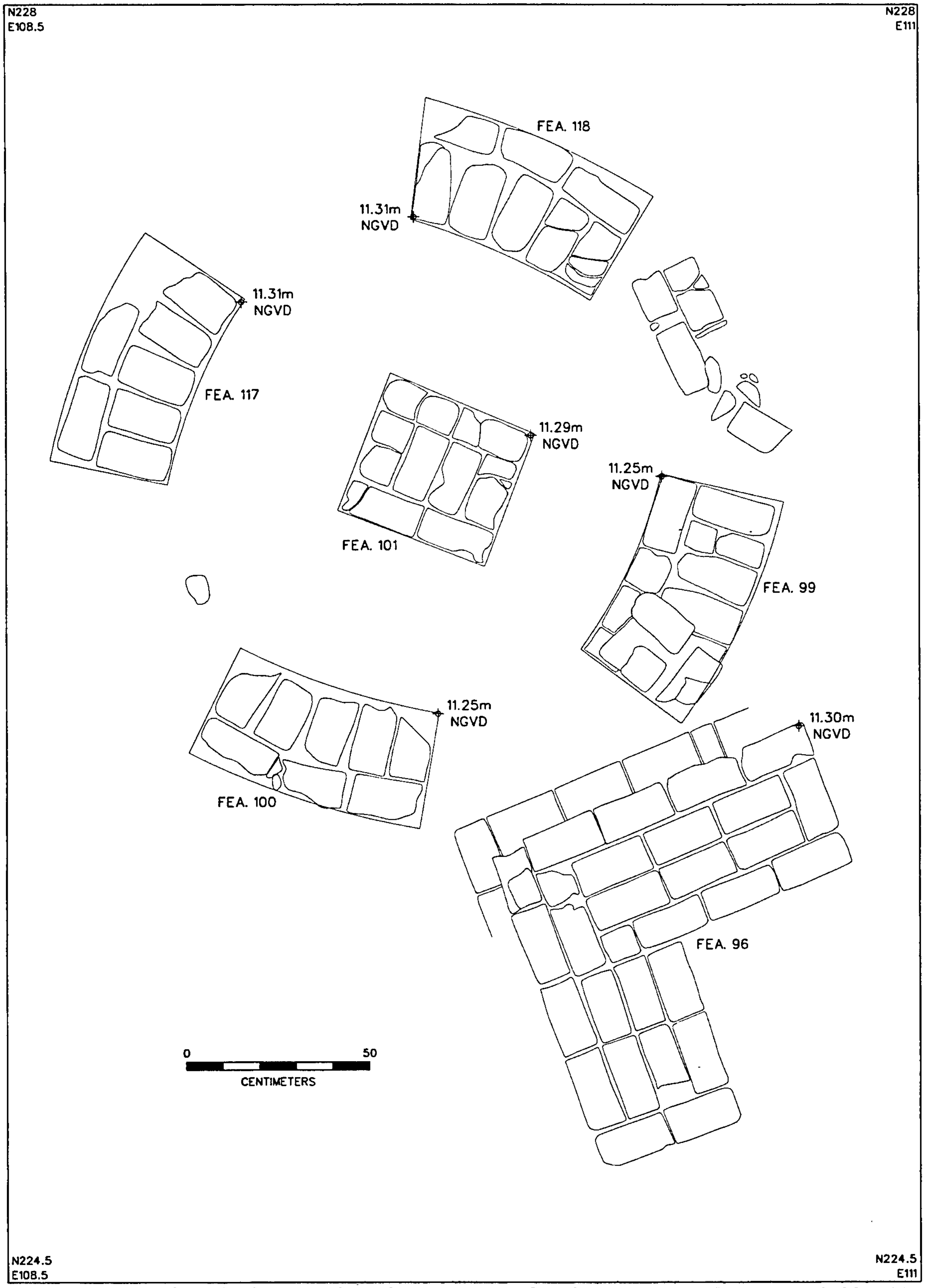


Figure 78. Plan of north cistern and northwest corner of Main House core (Features 96, 99, 100, 101, 117, 118, and 119), in Block E.

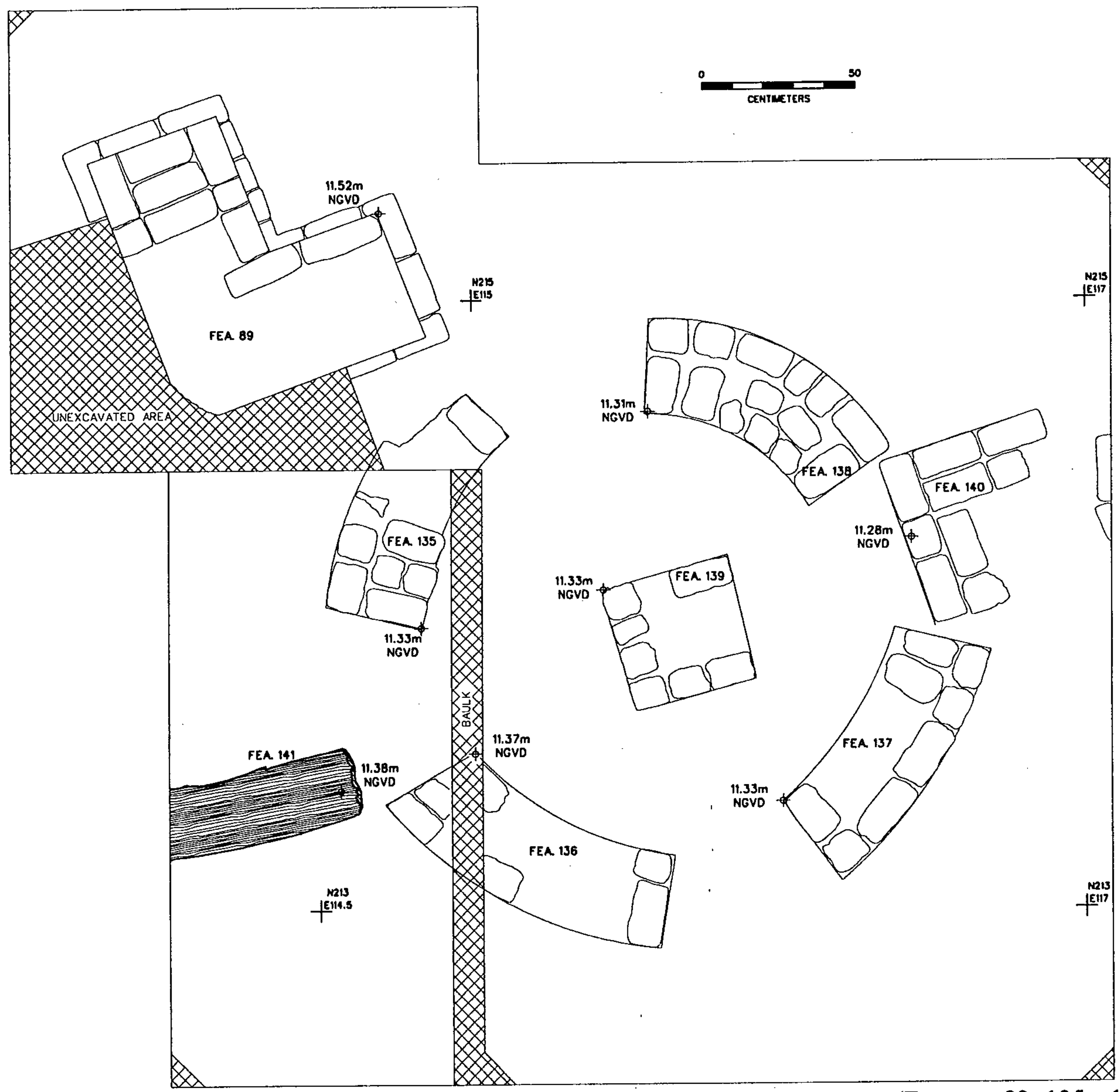


Figure 79. Plan of south cistern and southwest corner of the Main House core (Features 89, 135 - 141), in Block D.

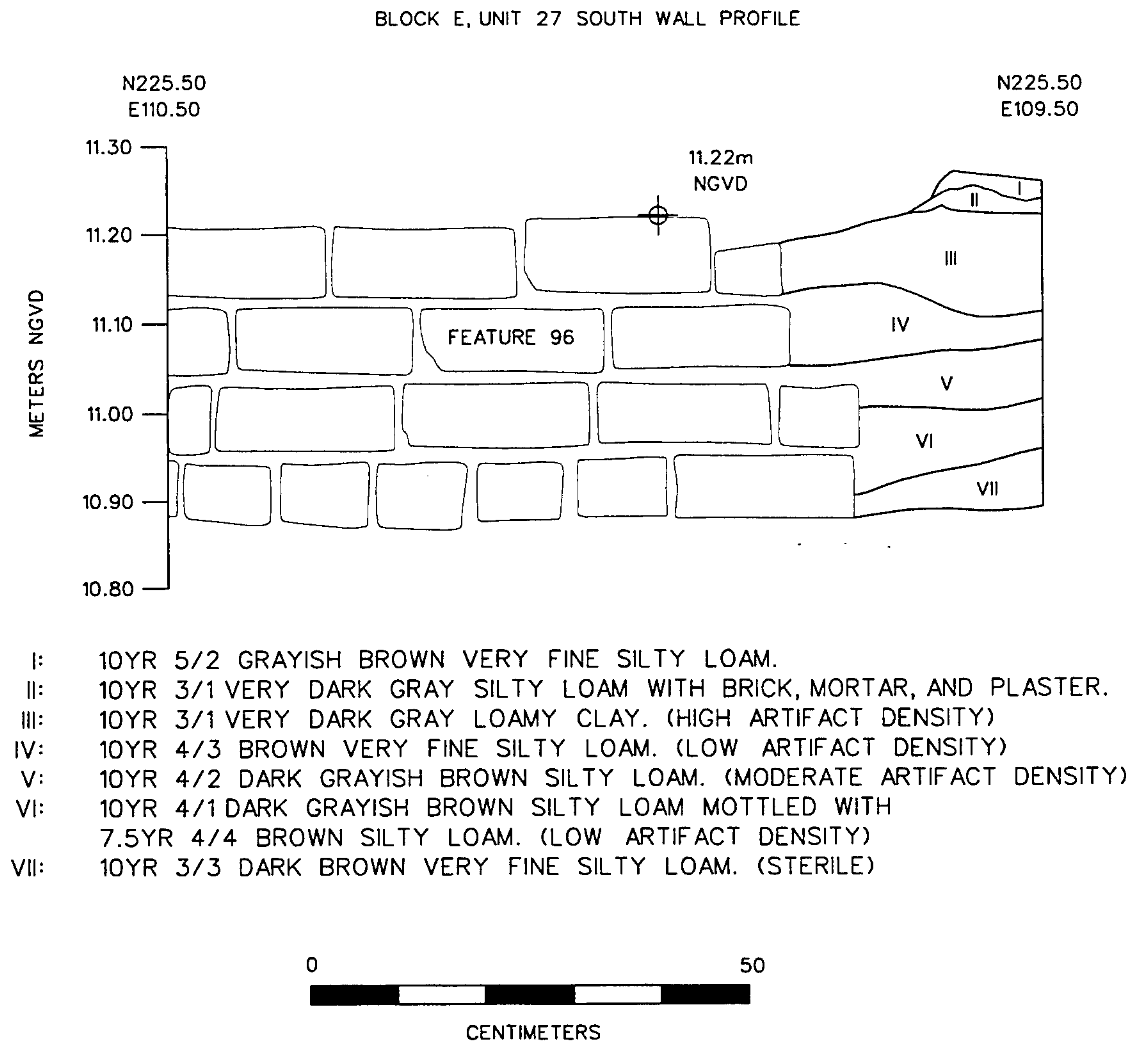
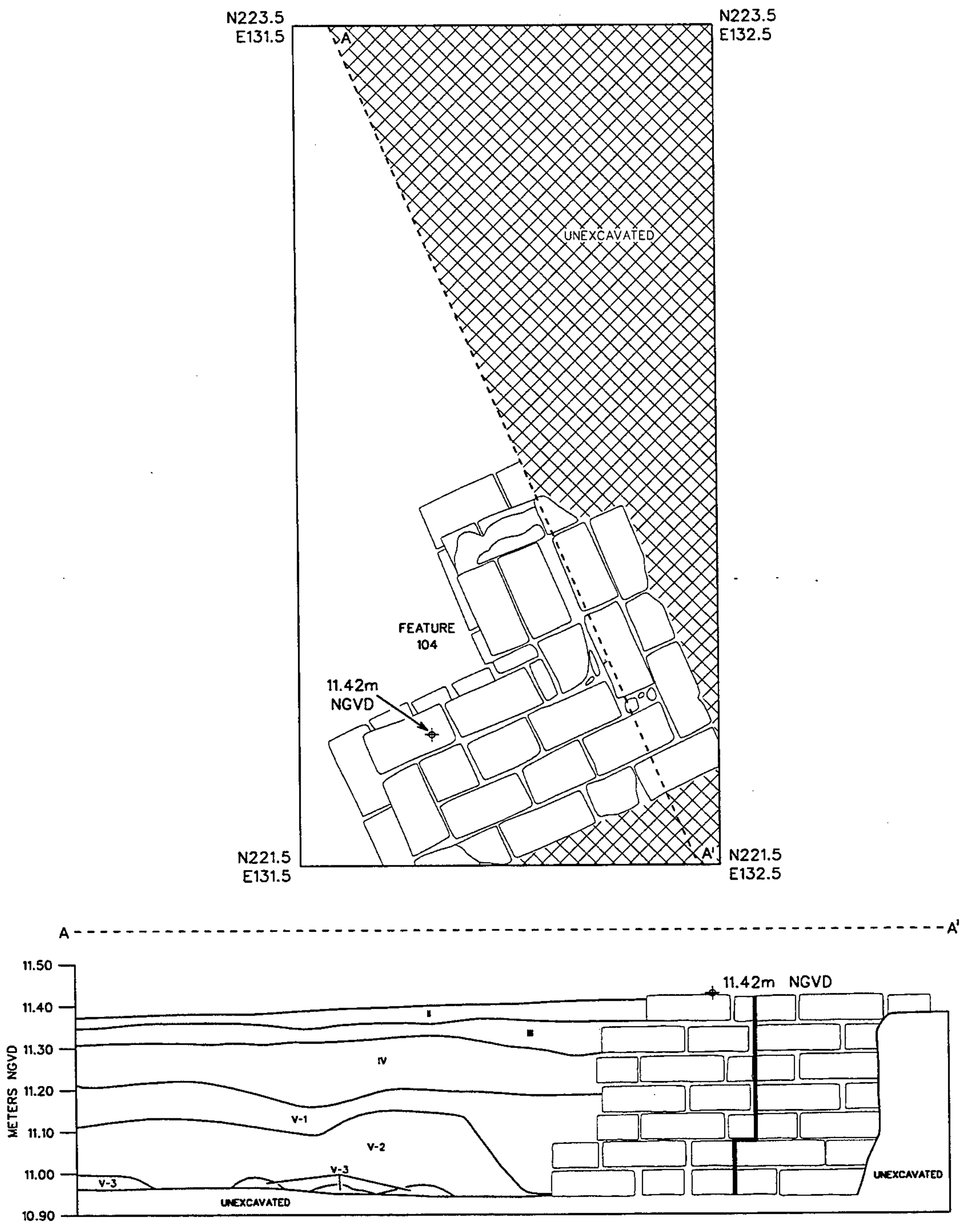


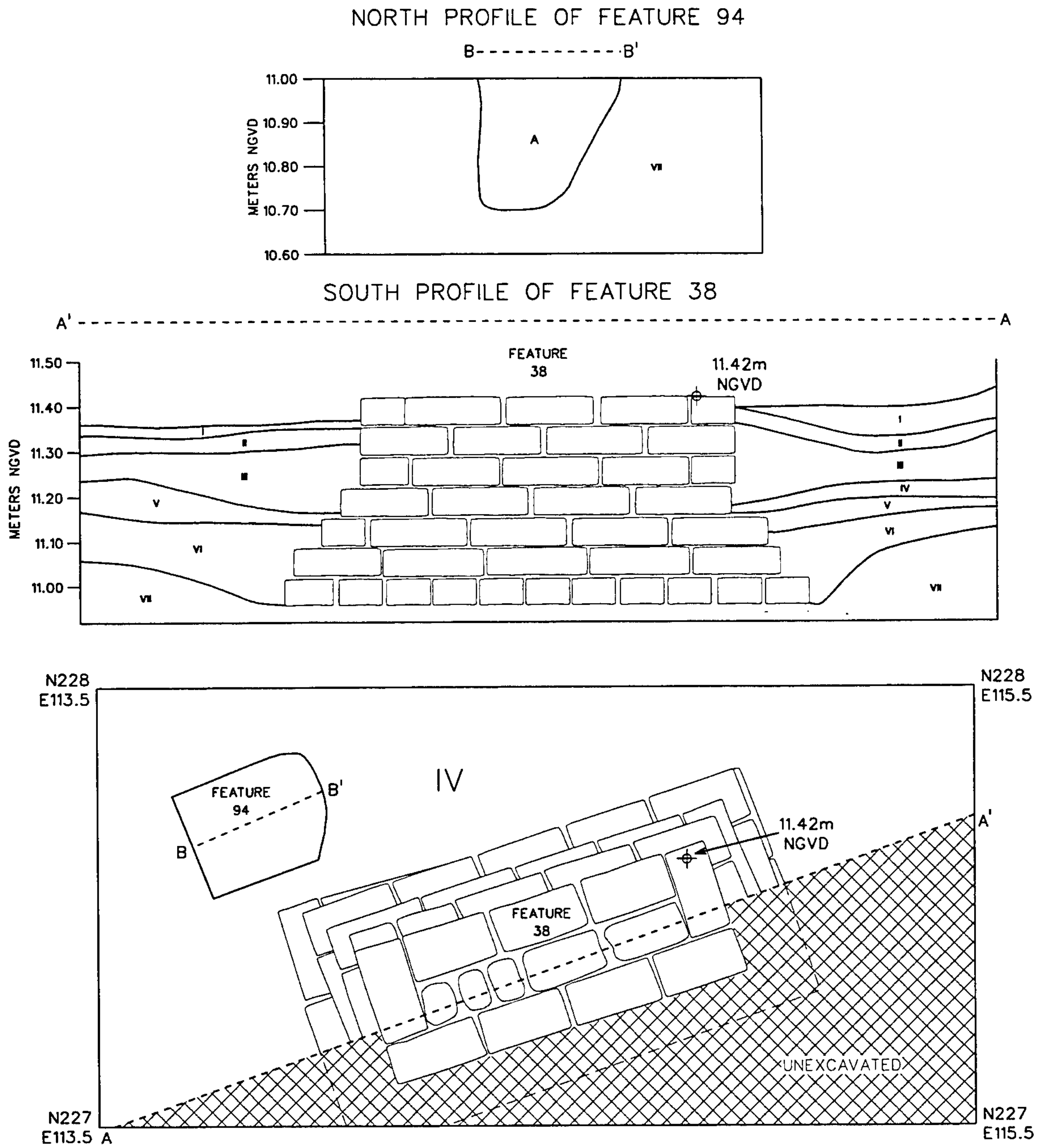
Figure 80. Profile view of brick pier at the southwest corner of the core of the Main House. Block E, Unit E/27, Feature 96.



II: 10YR 4/2 DARK GRAYISH BROWN SILTY LOAM WITH HIGH BRICK, MORTAR AND PLASTER CONTENT. (DESTRUCTION LAYER)
III: 10YR 3/1 VERY DARK GRAY SILTY LOAM WITH COAL AND SLAG. (MODERATE ARTIFACT DENSITY)
IV: 10YR 5/3 BROWN VERY FINE SILTY LOAM.
V-1: 5YR 4/2 DARK REDDISH GRAY SILTY LOAM MOTTLED WITH 10YR 4/4 DARK YELLOWISH BROWN SILTY LOAM WITH HIGH BRICK CONTENT. (MODERATE ARTIFACT DENSITY)
V-2: 10YR 5/3 BROWN VERY FINE SILTY LOAM MOTTLED WITH 10YR 4/4 YELLOWISH BROWN SILTY LOAM.
V-3 10YR 3/3 VERY DARK GRAYISH BROWN SILTY CLAY.

0 50
CENTIMETERS

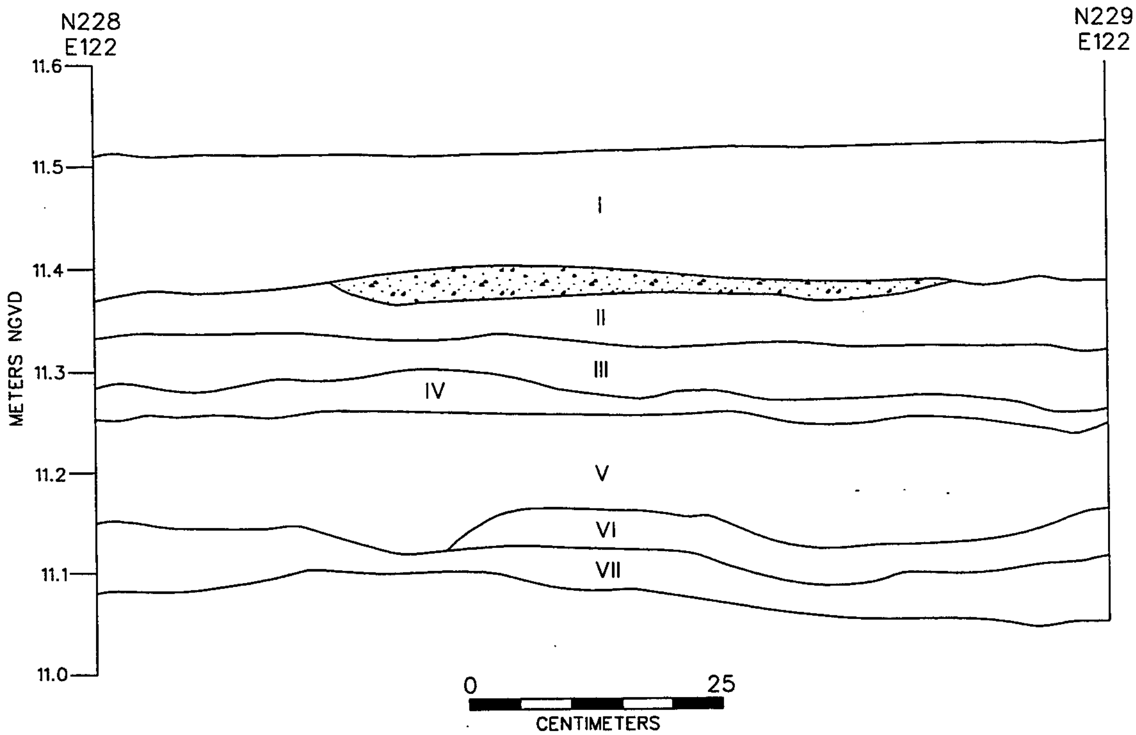
Figure 81. Plan and profile views of the southeastern corner pier of the core of the Main House. Block E, Unit E/32, Feature 104.



I: 10YR 5/3 BROWN VERY FINE SANDY LOAM. (VERY LOW ARTIFACT DENSITY)
II: 10YR 4/2 DARK GRAY VERY FINE SILTY LOAM WITH BRICK, MORTAR, AND PLASTER. (VERY LOW ARTIFACT DENSITY)
III: 10YR 4/2 DARK GRAY VERY FINE SILTY LOAM WITH CHARCOAL, ASH, AND SHELL. (HIGH ARTIFACT DENSITY)
IV: 10YR 5/2 GRAYISH BROWN VERY FINE SANDY LOAM. (LOW ARTIFACT DENSITY)
V: 5YR 4/2 DARK REDDISH GRAY BROWN SILTY LOAM WITH BRICK FRAGMENTS. (MODERATE ARTIFACT DENSITY)
VI: 10YR 5/3 BROWN VERY FINE SANDY LOAM MOTTLED WITH 10YR 4/6 DARK YELLOWISH BROWN VERY FINE SANDY LOAM. (STERILE)
VII: 10YR 5/3 BROWN VERY FINE SILTY LOAM MOTTLED WITH 10YR 5/2 GRAYISH BROWN FINE SILTY LOAM. (STERILE)
A: 10YR 5/4 BROWN VERY FINE SILTY LOAM MOTTLED WITH 5YR 4/3 REDDISH BROWN SILTY LOAM

Figure 82. Plan and profile views of brick pier from the core of the Main House, and an associated soil feature. Block E, Unit E/15, Features 38 and 94.

BLOCK E, WEST WALL PROFILE UNIT 50



I: 10YR 5/2 GRAYISH BROWN SILTY LOAM.
II: 10YR 3/2 VERY DARK GRAYISH BROWN SILTY LOAM MOTTLED WITH 10YR 4/3 BROWN SILTY LOAM.
III: 10YR 5/3 BROWN VERY FINE SILTY LOAM MOTTLED WITH 10YR 4/3 BROWN SANDY SILT LOAM.
IV: 10YR 5/2 GRAYISH BROWN SILTY LOAM.
V: 5YR 4/4 REDDISH BROWN BRICK DUST MOTTLED WITH 2.5Y 4/2 DARK GRAYISH BROWN SILT AND 10YR4/3 BROWN SILT.
VI: 10YR 4/2 DARK GRAYISH BROWN SILTY LOAM.
VII: 10YR 5/3 VERY FINE SILTY LOAM.

DESTRUCTION LENS (BRICK AND MORTAR)

Figure 83. Profile of the west wall of Unit E/50, located in the core of the Main House.

deposition of Stratum V. Stratum VI produced no artifactual material; it did not exhibit the same physical properties as the Stratum IV alluvium, and appeared to have been used as intentional fill for the depression surrounding Feature 38. The depression in Stratum VII, apparent on both the east and the west sides of Feature 38, may have been caused by the weight of the structure on the easily compacted subsoil.

Unit E/14

Feature 26, a pier located just east of Feature 38 (Figures 76 and 84), was surrounded by a much higher density of destruction debris and of the upper midden deposit than Feature 38. Stratum II included both the destruction debris and materials from the upper midden deposit; this stratum contained large quantities of brick, mortar, and *Rangia* shell, in addition to hundreds of artifacts including ceramic and glass sherds, tobacco pipes, a tin can, a leather shoe sole, animal bone, iron sheeting, and nails. Stratum III, originating at a depth of between 11.2 and 11.3 m NGVD, was the alluvial deposit from the mid-nineteenth century. Artifact density in Stratum III was a small fraction of that observed in Stratum II. The majority of the recovered material was attributed to drift and to post-flood disturbance. Below the flood deposit was the second, earlier midden (Stratum IV), which exhibited the same characteristics as observed in Units E/50 and E/15 (Stratum V). The elevations of the deposit were similar in both Unit E/15 and Unit E/14, with the base of the deposit at approximately 11.17 m NGVD. Artifact content in Stratum IV was limited to moderate quantities of brick, glass, ceramics, nails, and charcoal.

Stratum V was a virtually sterile deposit that appeared to have been intentionally placed. This corresponded to Stratum VI in Unit E/15. Stratum V filled a concavity at the base of the pier (Feature 26), which appeared to have been excavated intentionally, possibly at the time of original construction. Feature 79 (Figure 84) ran along the interior (south) side of Feature 26. Its trench-like configuration, and its sterile, silty fill suggested that it may have been excavated in order to effect repairs to the pier. This feature type was repeated frequently in different areas of the site, and at different elevations; most ran next to piers, but did not seem to possess characteristics of builder's trenches. Rather, the piers had been constructed on grade, and fill had been brought in to level, or to raise, the surrounding yard area.

Unit E/32

The stratigraphic sequence associated with Feature 104, the southeastern corner of the core of the main house (Figures 76 and 81), again was similar to the general pattern exhibited for this area of the site. Stratum II was the destruction layer, and contained dense deposits of charcoal, brick and mortar fragments, and small quantities of nails, ceramics, glass, and bone. Stratum III, the upper midden deposit, contained quantities of coal, and small numbers of nails; one fragment of glass was recovered. While the midden soil in this unit was similar to that in the central areas of the core, the variance in artifact density reflected differential disposal patterns.

The flood layer was more pronounced in this area than in the central portion of the core. Stratum IV in this locale was 10 to 15 cm (3.9 to 5.9 in) in thickness, more than twice that of the central core units. It contained only a few small brick fragments, and some coal fragments. Stratum V, Level 1, was the earlier midden, characterized by the reddish hue imparted by the presence of quantities of small brick chips. Artifact content was low to moderate, with fewer than 50 glass, ceramic, bone, and iron fragments. Stratum V, Level 2 retained some qualities of the second midden, but a gradual transition to a 10YR 5/3 silty loam, similar to Stratum V in Unit E/14, became apparent by the bottom of the level at approximately 11.0 m NGVD. A concavity, filled with the Stratum V, Level 1 soils, was apparent next to Feature 104. This may have resulted from activities similar to those that created Feature 79 in Unit E/14.

Unit E/24

Feature 37, an internal pier of the core structure (Figures 76 and 85), served as a support for major cross-members that underpinned the house; it probably marked the division between gallery and interior. It was located approximately 2.9 m (9.5 ft) from Feature 27, the closest outside pier of the core. The upper course of the pier was at an elevation of 11.54 m NGVD, and the bottom of the seventh course of brick (base of pier) was at an elevation of 11.09 m NGVD.

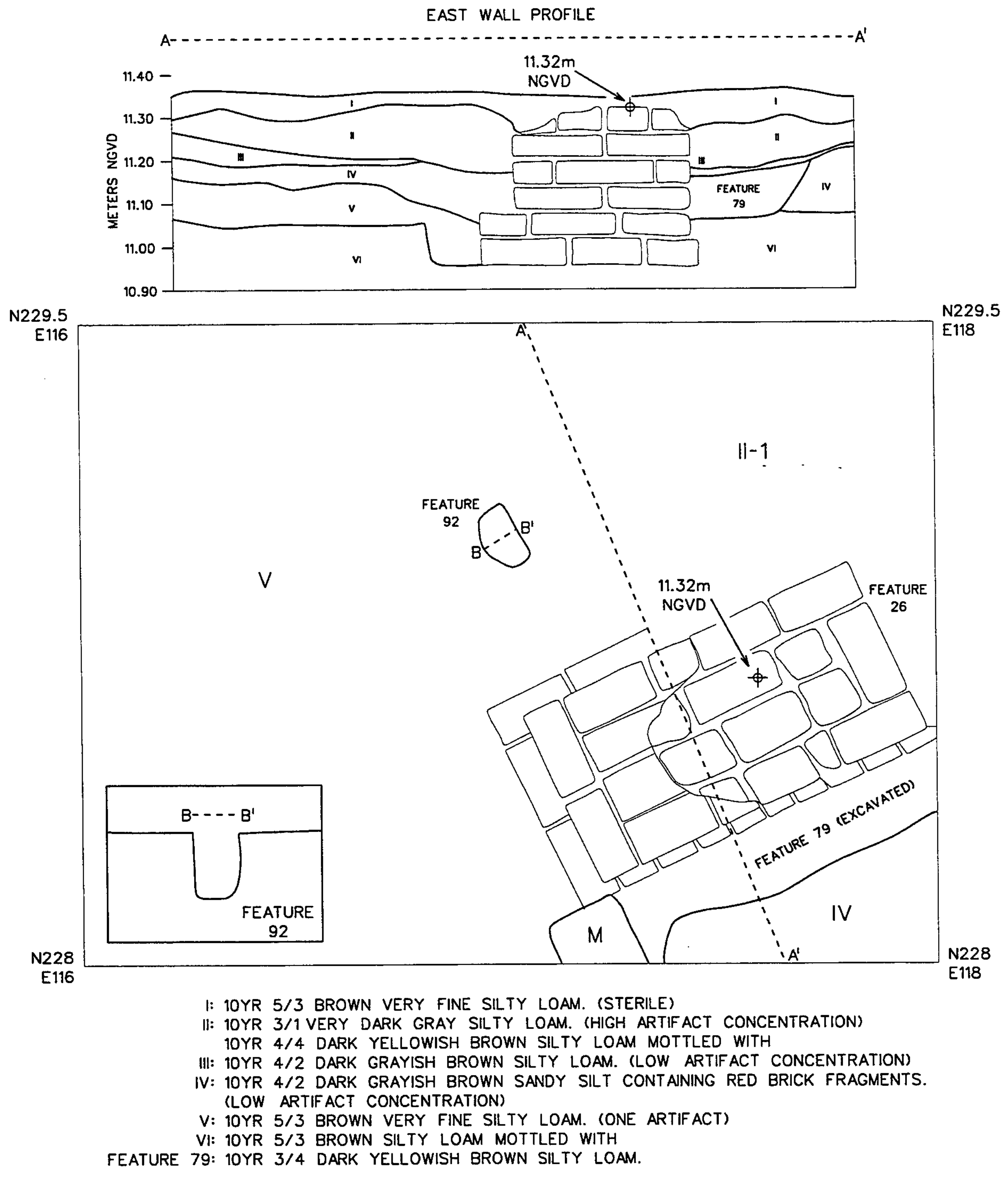


Figure 84. Plan and profile views of brick pier from the core of the Main House and associated soil features. Block E, Unit E/14, Features 26, 79, and 92.

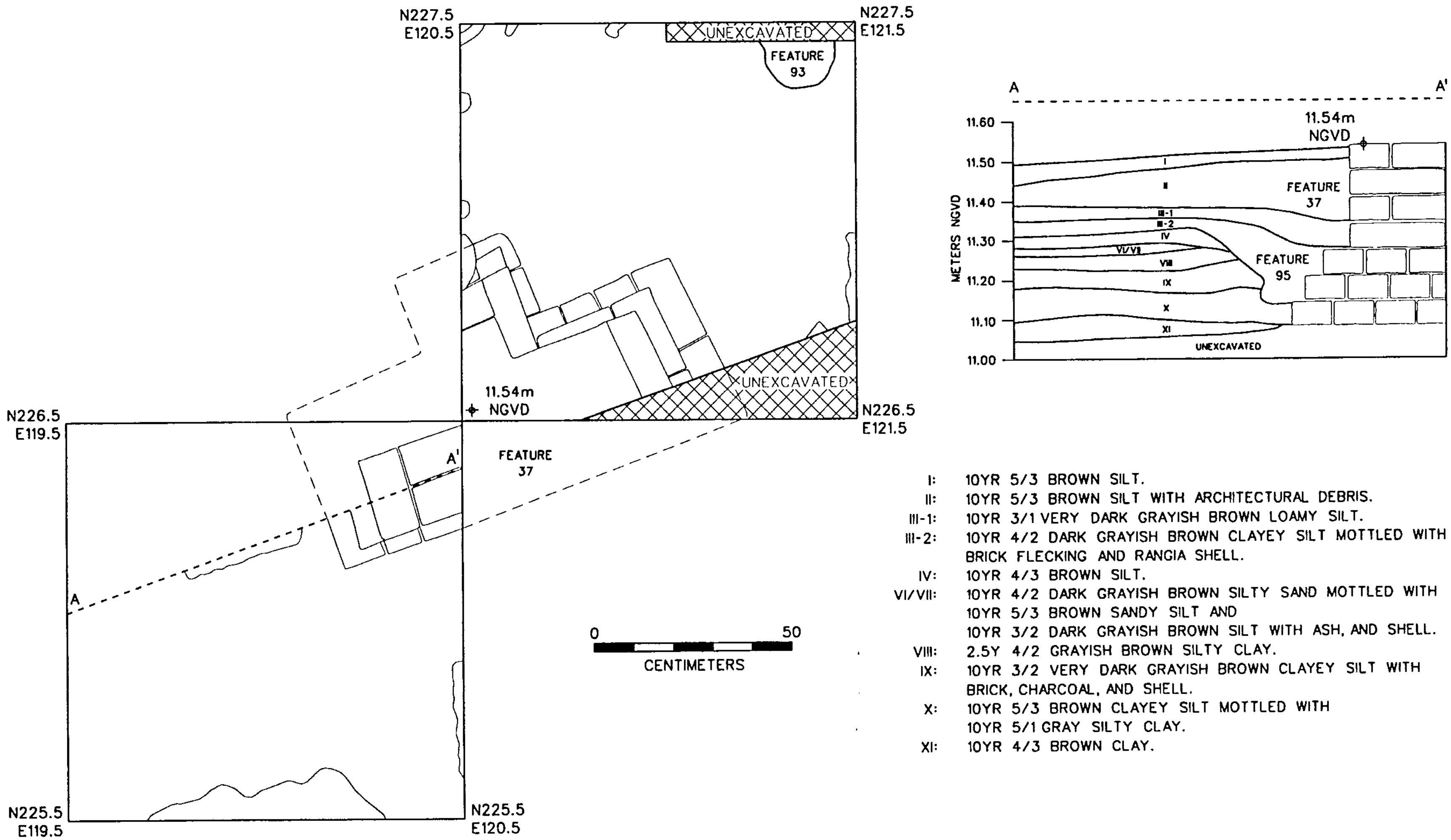


Figure 85. Plan and profile views of a brick pier from the core of the Main House, a plan view of Feature 93, and a profile view of Feature 95. Block E, Units E/23 and E/24.

Stratum II, the destruction debris surrounding Feature 37, ranged from 5 to 15 cm (1.96 to 5.9 in) in thickness, increasing as it approached the pier. This layer was characterized by the inclusion of brick and mortar rubble, and fragments of plaster from the exterior face of the pier. Also recovered were four nails, two ceramic sherds, and three glass sherds; two of these were window glass.

The late midden, Stratum III, contained a lower relative density of cultural materials than did areas on the exterior of the structure, but still produced ceramics, glass, bone, and nails. The lower levels of the midden were characterized by a high concentration of *Rangia* shell in close proximity to the pier. At approximately 11.3 m NGVD, Stratum III soils filled a concavity (Feature 95) that continued to a depth of 11.15 m NGVD, next to the pier (Figure 85). This feature appears to have corresponded to a repair episode; *Rangia* shell, charcoal, and an unidentified, charred, organic substance (possibly bagasse), were packed tightly against the pier. This may have been done to facilitate drainage.

The flood deposit in the area under the core structure corresponded to Stratum VIII, a nearly sterile silty clay. The earliest midden was represented by Stratum IX, at a depth of 11.15 to 11.25 m NGVD. This stratum contained a low density of artifacts, but it, too, was characterized by the high density of brick chips and charcoal.

The South Wing Features

Like the core structures, the south wing of the main house was constructed on brick piers. Stratigraphic and architectural evidence suggest that it was constructed as a separate building, contemporaneously with the core of the main house. The stratigraphic evidence indicates that the south wing later was attached to the core. At a similar time, the centrally placed chimney foundation underwent remodeling, perhaps replacing an earlier, less permanent hearth. This remodeling occurred prior to the mid-nineteenth century flood, probably in the 1830s or 1840s.

Excavations in the area of the south wing all were in Block D. The majority of units excavated within Block D were associated either with features of the south wing, or with investigation of the stratigraphic sequence in the yard areas around the wing (Figures 67, 76, and 86). A total of 34 square meters were excavated in the area of the south wing. Fifteen piers (Features 49, 50, 54-58, 63, 65, 85-88, 231, and 115B), and the foundation of an H-shaped fireplace (Feature 84), were investigated during mitigation excavations. The piers were approximately 2.6 m (8.77 ft) from center to center. If measured from Feature 50 to Feature 65 (Figure 86), the north - south dimensions of the structure were 11.7 m (38.4 ft). The east - west dimensions were 4.94 m (16.2 ft) to the gallery on the east side, and 8.06 m (26.4 ft) including the 3.06 m (10 ft) gallery. These dimensions describe a building approximately 16 x 38 ft in size, with a 10 ft wide gallery running the length of one side. The hearth foundation (Feature 84), was directly in the center of the interior of this structure. The stratigraphic evidence supports an early construction date for the south wing, with later remodeling turning it into an integral part of the core of the main house.

Typical Stratigraphy of the South Wing

With some variations, the stratigraphy of the south wing area exhibited the same basic characteristics as the core area of the main house. Figure 87 illustrates a typical profile away from the pier features of the south wing. The dark upper midden displays a thin band of alluvium in its center, but is underlain by the much thicker flood stratum dating from the early 1850s. Beneath this, the darker soil of the early midden can be seen clearly.

Unit D/16

The stratigraphic sequence exhibited in this unit was typical of that around the majority of piers in the south wing. This unit contained Feature 231, a brick pier, and Feature 238, a post associated with the structure (Figure 88). Stratum I was composed of silt associated with the flood of 1993-1994. Stratum II was destruction debris, mixed with materials from the late midden. This stratum had a high brick and mortar content, and its position overlying Feature 231 indicated that the pier had been removed to ground level at the time of destruction, and that the ground later had been smoothed, covering the top of the remaining bricks. Stratum III was a thick band of alluvium resulting from the flooding episode in 1851. This stratum ranged in elevation from approximately 11.15 to 11.25 m NGVD, approximately the same

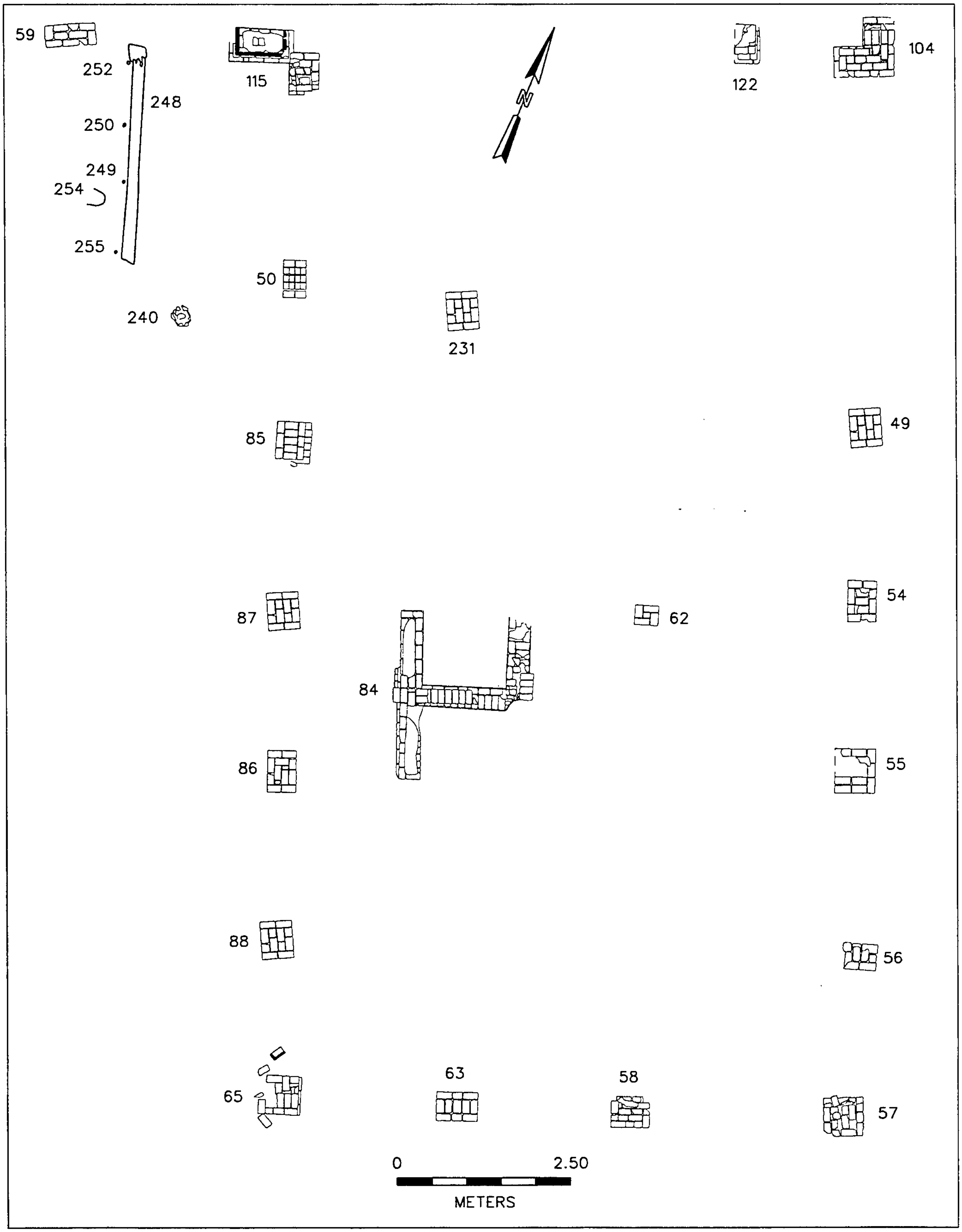


Figure 86. Plan view of the south wing of the Main House.

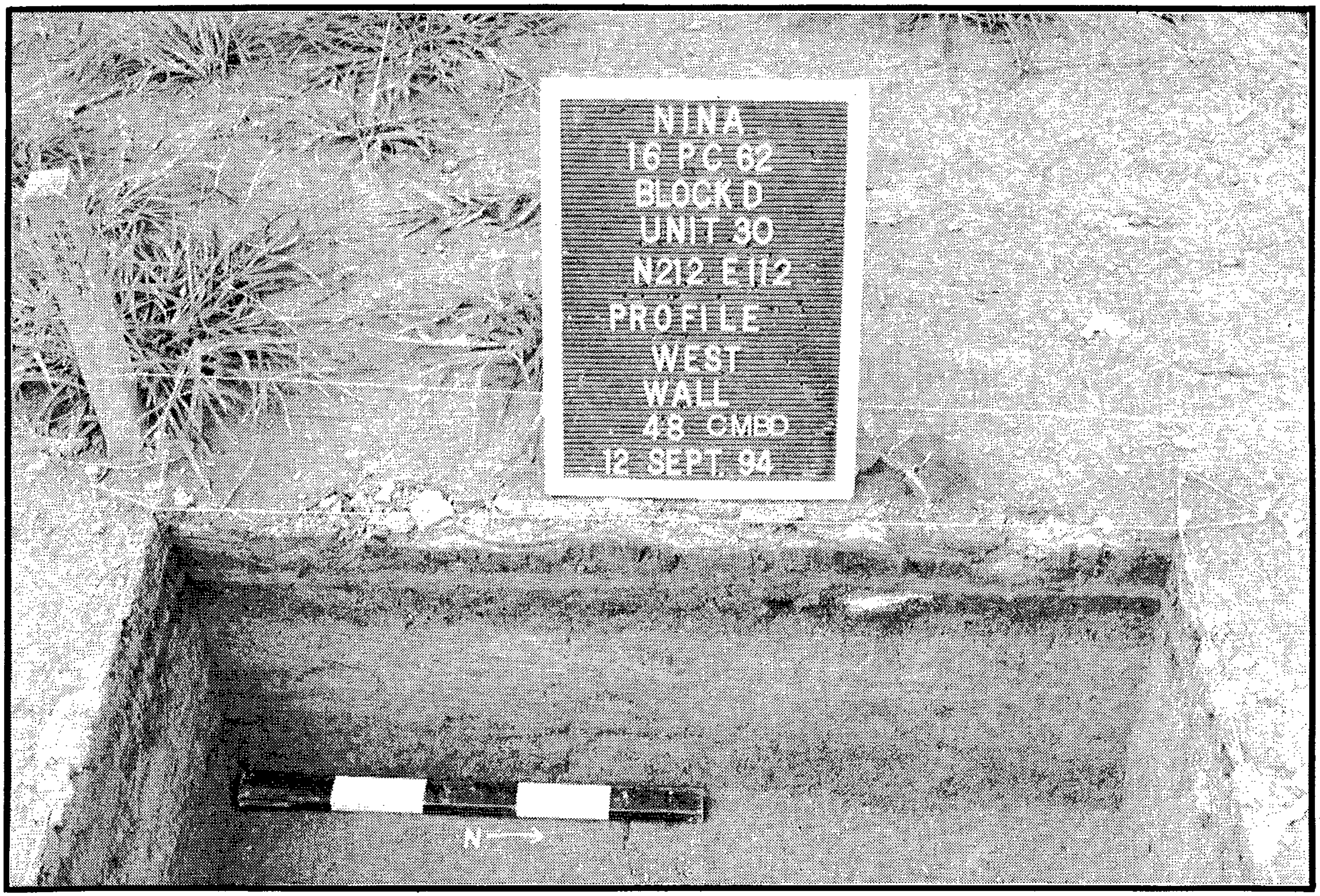
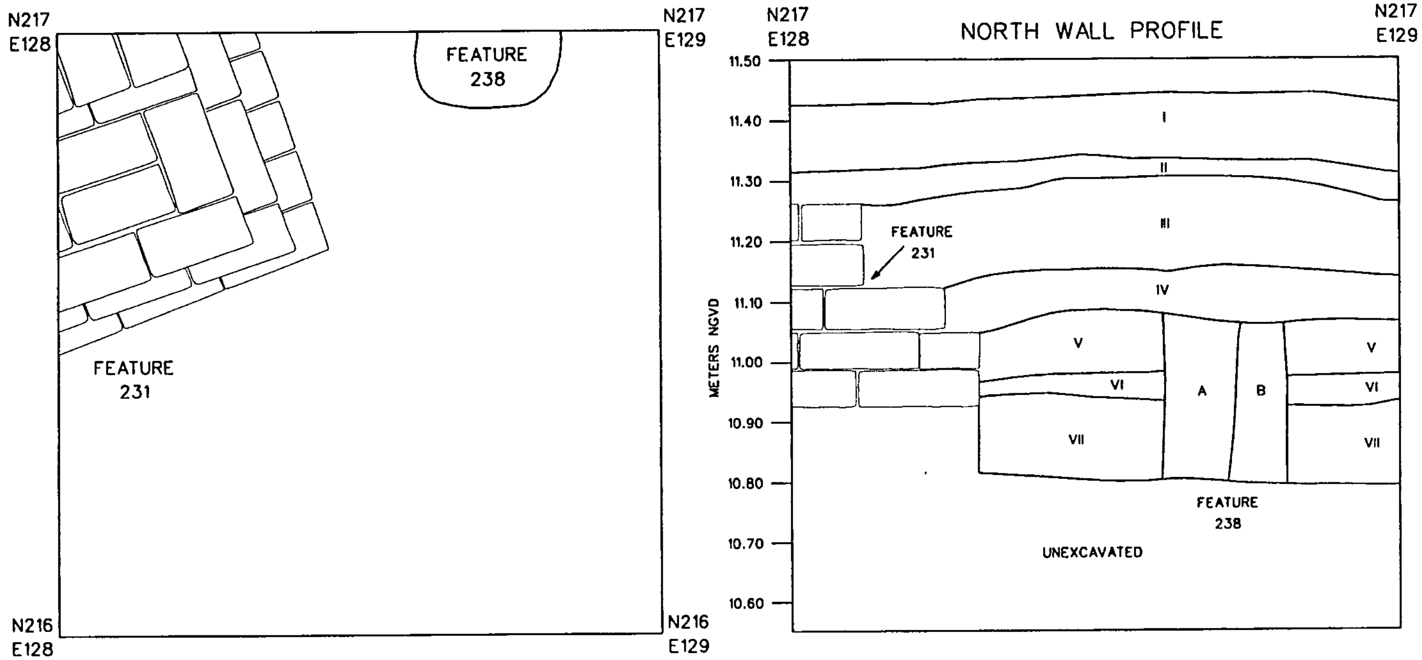


Figure 87. Typical profile of stratigraphic sequence at Nina Plantation. The 1851 flood event is evident in the thick alluvial stratum separating the two dark midden strata.



I: 10YR 5/3 BROWN VERY FINE SILT LAYERED WITH 10YR 3/3 DARK BROWN SILTY CLAY.

II: 10YR 4/2 BROWN SILTY LOAM WITH BRICK AND MORTAR FRAGMENTS.

III: 10YR 5/3 BROWN VERY FINE SILT.

IV: 10YR 4/3 BROWN FINE SAND WITH BRICK FRAGMENTS.

V: 10YR 5/3 BROWN SILT.

VI: 10YR 3/2 VERY DARK GRAYISH BROWN SILT WITH BRICK AND MORTAR FRAGMENTS.

VII: 10YR 5/2 GRAYISH BROWN SILTY CLAY MOTTLED WITH 7.5YR 4/6 STRONG BROWN SILTY CLAY GRADING TO 10YR 5/2 GRAYISH BROWN CLAY MOTTLED WITH 2.5YR 3/6 DARK RED SILTY CLAY.

FEATURE 238:

A: 2.5Y 4/2 DARK GRAYISH BROWN SILTY CLAY MOTTLED WITH 7.5YR 5/6 STRONG BROWN SILTY CLAY.

B: 2.5Y 5/3 LIGHT OLIVE BROWN MOTTLED WITH 7.5YR 5/6 STRONG BROWN SILT.

Figure 88. Plan and profile views of a brick pier and postmold/posthole from the south wing of the Main House. Block D, Unit D/16, Features 231 and 238.

elevational range as the flood layer in Block E around the core structure. Artifact density dropped dramatically in Stratum III, although two glass fragments, a ceramic sherd, a nail, and four small bone fragments were recovered.

Below Stratum III was the early midden, characterized by extensive brick chips, charcoal, and a rise in the artifact density. Ceramics, bone, fish scale, glass, and iron were recovered from this stratum. Stratum IV ranged in elevation between 11.05 and 11.15 m NGVD. At the base of Stratum IV, Feature 238, an early posthole, became apparent; it continued to a depth of 10.8 m NGVD.

Strata V and VI were characterized by light artifact density, and contained small quantities of brick and mortar fragments. These strata may have been associated with the construction period of the south wing. The base of the pier was reached at approximately 10.93 m NGVD, and rested on sterile soil.

Unit D/9

The soils surrounding Feature 85, a brick pier located in the south wall of the south wing (Figures 86 and 89), exhibited a similar stratigraphic sequence. However, there was little evidence in this unit of destruction debris. Stratum I was the late nineteenth century midden deposit, ranging in elevation between approximately 11.28 and 11.31 m NGVD. Artifact content was moderate, with ceramics, nails, glass, iron, and bone recovered. Below this stratum was the flood deposit from the mid-nineteenth century. This stratum showed indications of disturbance, and appeared quite mottled. Artifact density was low, but the stratum contained glass, bone and shell, and ceramics. The base of this alluvial deposit lay at an elevation of approximately 11.15 m NGVD.

Below the flood deposit was the early midden, again characterized by a large number of brick chips, charcoal, ceramics, bone, metal, and glass. This midden was approximately 8 cm (3.14 in) in thickness, and its sloping base lay between approximately 11.08 and 11.1 m NGVD. Strata IV and V had very low densities of cultural materials, and appeared to have been placed intentionally. The base of the pier was at approximately 10.93 m NGVD.

Unit D/2

This unit incorporated Feature 65, a brick pier at the southwest corner of the south wing (Figures 86 and 90). The stratigraphic sequence in Unit D/2 exhibited the same basic pattern as noted elsewhere in the south wing, although the lower midden was emphemeral, and the division between sterile soil and the lower cultural levels was no longer visible. The upper, late midden was present as Stratum II; it was characterized as a thin deposit that contained a moderately low density of ceramics, glass, nails, and fish scales.

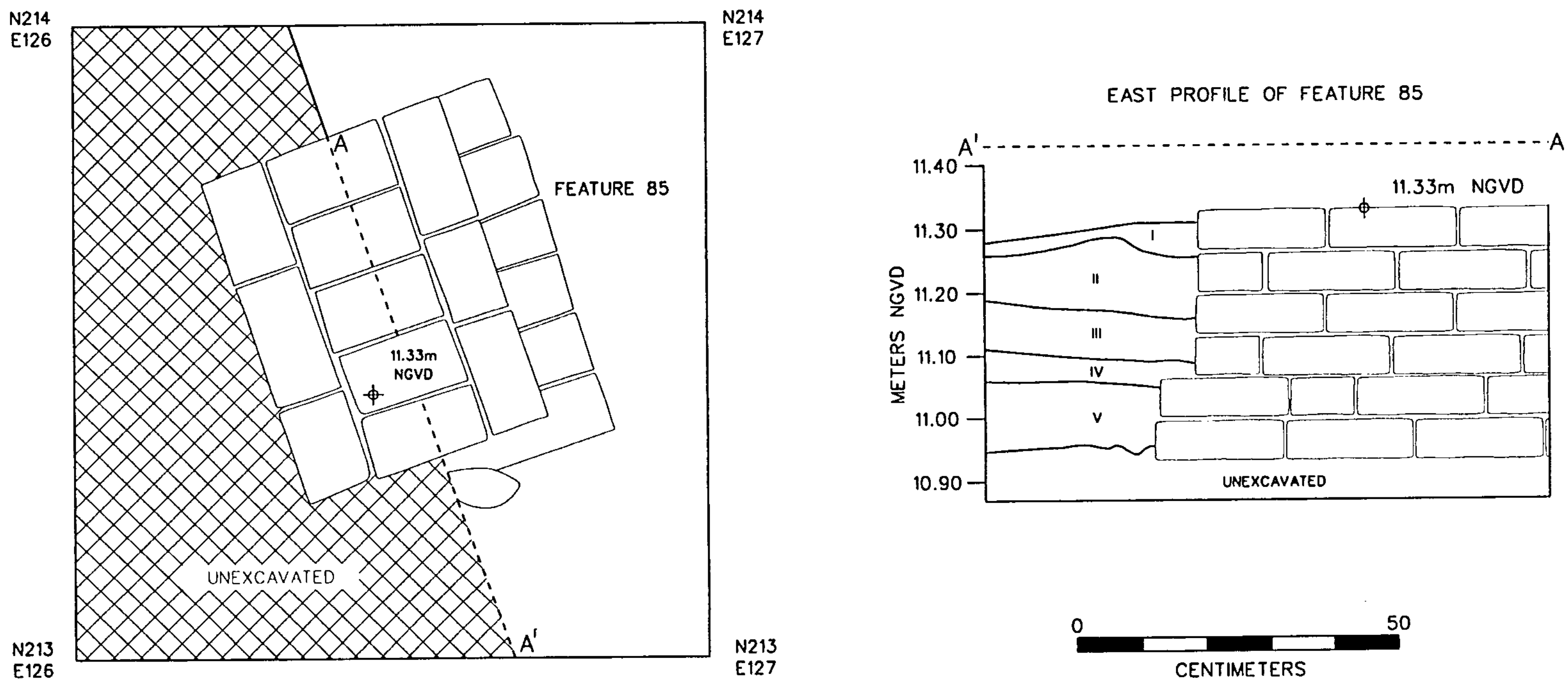
The 1851 flood layer was labeled Stratum III; it was a thick band of alluvium with a very low density of cultural materials. One ceramic sherd and two fragments of glass were recovered. The base of the flood deposit lay at an approximate elevation of 11.12 m NGVD.

Below the flood deposit was the lower, earlier midden. The top 10 cm (3.9 in) of Stratum IV matched the description of this early midden from other units. It contained a high density of brick fragments, charcoal, nails, bone, ceramics, and glass. Stratum IV, Level 2, was a transitional zone between the early midden and sterile soil. The base of Feature 65 was at an elevation of approximately 10.92 m NGVD.

Unit D/6

Unit D/6 was excavated to investigate Feature 84, the H-shaped chimney foundation in the central portion of the south wing (Figures 86, 91, and 92). The stratigraphic sequence in the vicinity of Feature 84 had been truncated, possibly by post-occupation activities on the site, and by the removal of the bricks in one section of the feature. The sequence did not contain the late midden deposit; it began with the flood layer from the mid-nineteenth century (Stratum I). This deposit capped a series of midden soils that had built up against the brick of the feature (Figure 91). Stratum IV was apparent on the interior of the hearth as a cultural surface with ceramics, shell, and glass at the same elevation (Figure 92).

The lowest stratum in this area was Stratum VI, a cultural layer containing charcoal and brick, and a low to moderate density of ceramics, bone, and glass. This stratum continued underneath Feature 84, therefore pre-dating emplacement of



I: 10YR 4/2 DARK GRAYISH BROWN FINE SILTY LOAM. (MODERATE ARTIFACT DENSITY)
II: 10YR 4/4 DARK YELLOWISH BROWN SILTY LOAM. (MODERATE ARTIFACT DENSITY)
III: 10YR 4/3 BROWN SILTY LOAM. (HIGH ARTIFACT DENSITY)
IV: 10YR 4/4 DARK YELLOWISH BROWN VERY FINE SILTY LOAM. (LOW ARTIFACT DENSITY)
V: 10YR 4/3 BROWN SILTY CLAY. (LOW ARTIFACT DENSITY)

Figure 89. Plan and profile views of a brick pier from the south wing of the Main House. Block D, Unit D/9, Feature 85.

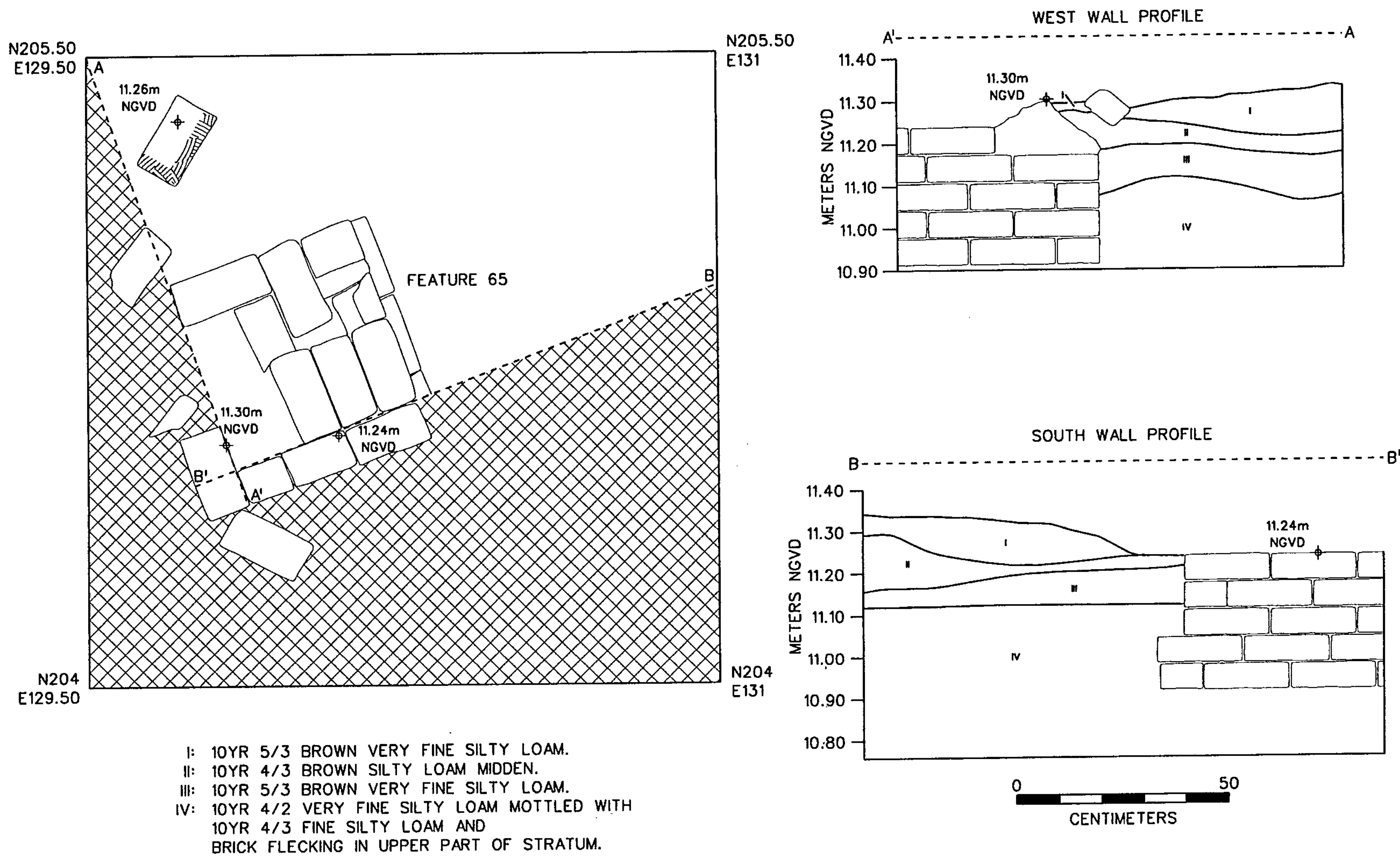
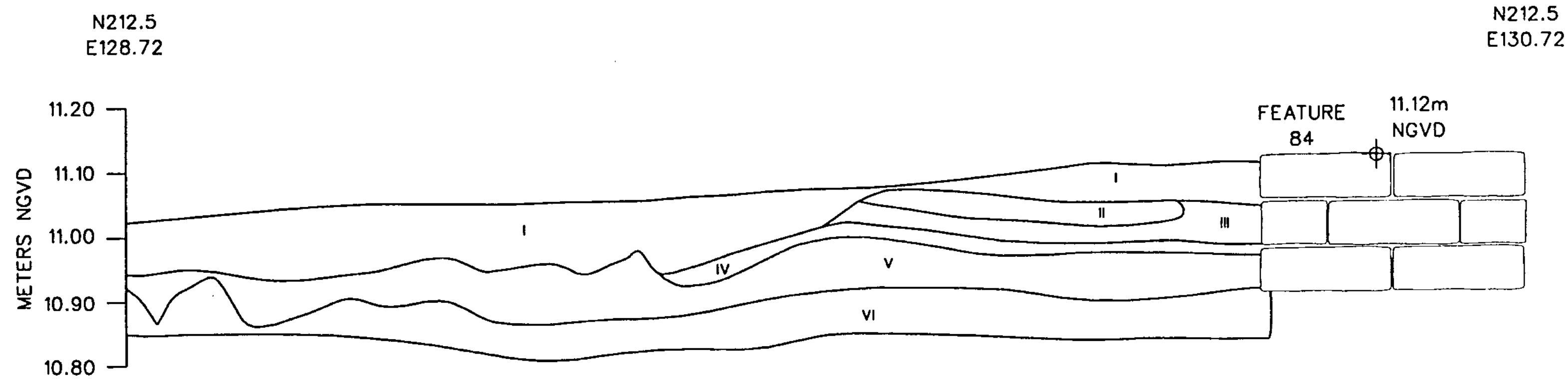


Figure 90. Plan and profile views of a brick pier at the southeastern corner of the south wing of the Main House. Block D, Unit D/2, Feature 65.

BLOCK D, NORTH WALL PROFILE OF UNIT 6



I: 2.5Y 3/3 DARK OLIVE BROWN CLAYEY SILT.
II: 2.5Y 5/3 LIGHT OLIVE BROWN SILT MOTTLED WITH 2.5Y 4/3 OLIVE BROWN SILT.
III: 2.5Y 5/3 LIGHT OLIVE BROWN SILT. (MODERATE ARTIFACT DENSITY)
IV: 2.5Y 4/3 OLIVE BROWN SILTY SAND WITH HIGH BRICK AND MORTAR CONTENT. (MODERATE ARTIFACT DENSITY)
V: 2.5Y 4/3 OLIVE BROWN SILTY SAND WITH BRICK AND MORTAR CONTENT. (MODERATE ARTIFACT DENSITY)
VI: 2.5Y 4/3 OLIVE BROWN SANDY SILT WITH CHARCOAL AND BRICK INCLUSIONS. (MODERATE TO LOW ARTIFACT DENSITY)

Figure 91. Profile view showing midden and alluvial deposits associated with the south wing hearth. Block D, Unit D/6, Feature 84.

Figure 92. Brick chimney foundation (Feature 84) in the south wing of the Main House. Block D, Unit D/6.

the feature. While there was no evidence of an earlier hearth, the localized nature of this lowest cultural stratum suggested that it originated from the area of the fireplace, rather than from the more widespread disposal of materials from the core structure. As will be discussed in the section on the Outbuilding complex, the hearth in Structure 1 originally had been constructed of wood and clay, and had later been remodeled. It is possible that a similar sequence of events took place in the south wing. Ceramics recovered from Stratum VI included brown transfer-printed whitewares, and pearlwares. These would suggest deposition in the early part of the nineteenth century, perhaps during the 1830s-1840s. The data, therefore, suggest that the remodeling of the hearth (Feature 84) coincided with the attachment of the south wing to the main core.

Unit D/5

Stratigraphic evidence for the attachment of the south wing to the core of the main house was found in Unit D/5 (Figures 86, 67, and 93). Feature 115 was composed of a pier from the core of the main house (Feature 115A) and the attachment pier from the south wing (Feature 115B; Figure 93). The stratigraphy associated with these features was similar; Stratum II was the late midden, and Stratum III was the early midden. The flood layer in this area appeared only as thin lenses between the two strata, and they were not apparent in the profiles shown in Figure 93. Strata IV and V were the intentionally placed, low density cultural middens that were characteristic of the stratigraphy around the other core piers. The base of Stratum V corresponded in elevation with the base of Feature 115A (the core pier); both were measured at approximately 10.92 m NGVD. However, the base of Feature 115B (the south wing attachment) rested at an elevation of 11.02 m NGVD, and was underlain by Stratum V.

The pier construction itself indicated that the Feature 115B pier was not an integral part of the Feature 115A construction, and that it had been constructed separately. The alignment of the two piers indicated that the south wing had not been constructed with the original intent of attachment to the core structure (Figures 86 and 93).

The North Wing Features

Like the core and the south wing, the north wing of the main house was raised on brick piers (Figures 76 and 94). A total of fifteen piers (Features 29 - 31, 34 - 36, 40, 45, 51, 108 - 111, 113, and 120) defined the north wing; a central, H-shaped fireplace (Feature 66) also was identified. Five of these piers (Features 108 - 111, and 113) were defined by probing, and are listed by their coordinates in the feature list (Appendix I). The piers measured approximately 2.4 m (7.96 ft) from center to center, and were constructed with their bases at an approximate elevation of 11.15 m NGVD. Like the piers of the core, but unlike the piers of the south wing, the north wing piers incorporated beveled bricks in their upper course (Figure 95). The pattern of brickwork, however, was unlike either the core piers or the south wing piers. The bricks of the fireplace feature (Feature 66) had been removed completely during destruction; as a result, the brickwork could not be compared with that of the south wing's Feature 84. The stratigraphic evidence indicates that the north wing was added to the core of the main house during the second half of the nineteenth century.

Typical Stratigraphy of the North Wing

The stratigraphic sequence of the north wing of the main house bore similarities to the general stratigraphic sequence of the main house area, but differed in depth. The piers of the north wing either had been constructed on top of the mid-century flood deposit, or they were constructed within shallow builder's trenches that cut into the flood deposit. Below the flood deposit, the majority of the north wing units displayed little evidence of the early midden deposit that had been abundant around the core and the south wing; it was apparent that refuse disposal patterns during the early period did not include the northern portion of Block E.

Unit E/13

The excavation of this unit permitted investigation of Feature 27, the connecting pier between the north wing and the core of the main house (Figures 94 and 96). This L-shaped pier

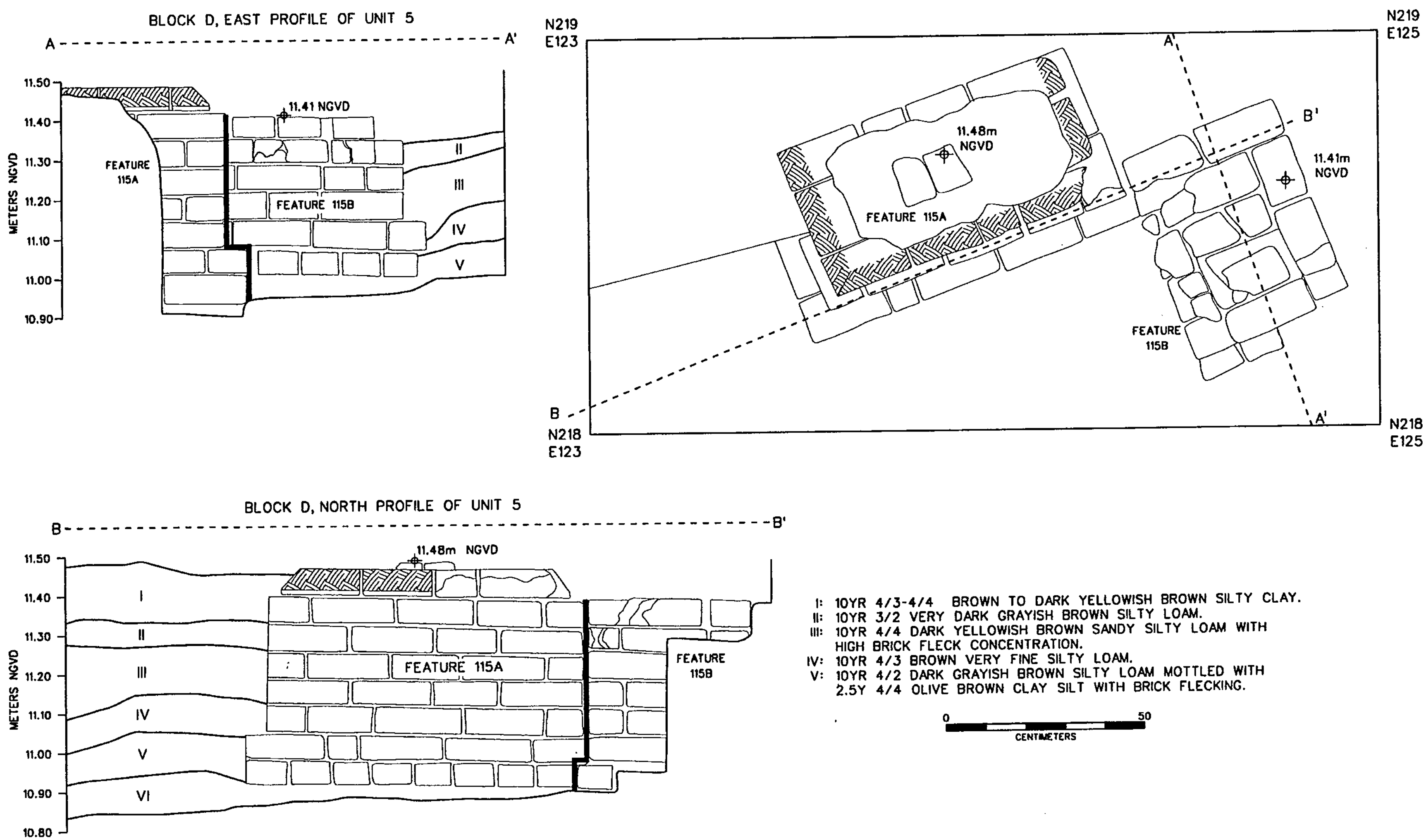


Figure 93. Plan and profile views of piers connecting the core and the south wing of the Main House. Block D, Unit D/5, Features 115 A and 115 B.

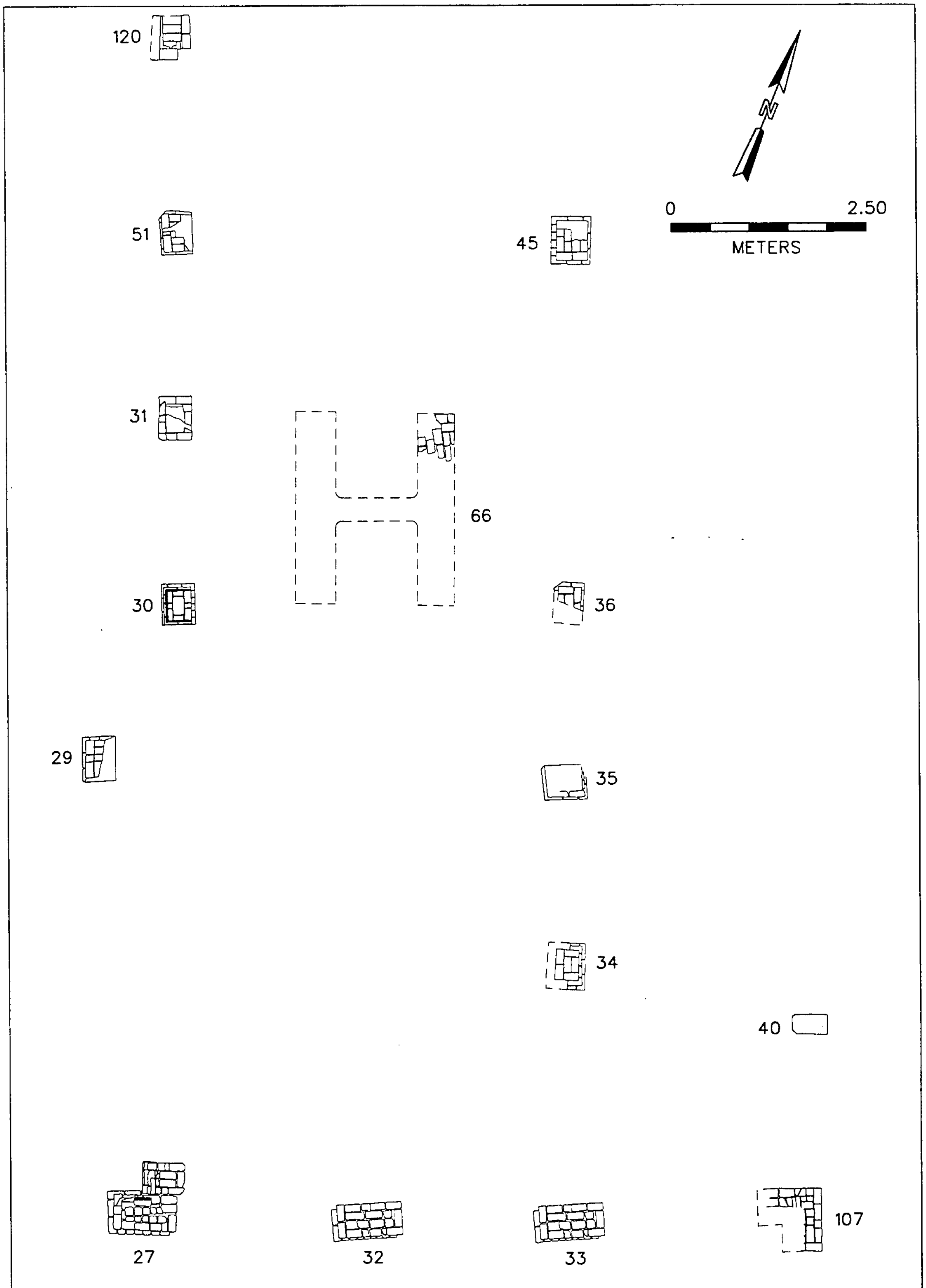


Figure 94. Plan view of the north wing of the Main House.

Figure 95. Feature 30, in Block E, showing pier and brick rubble.

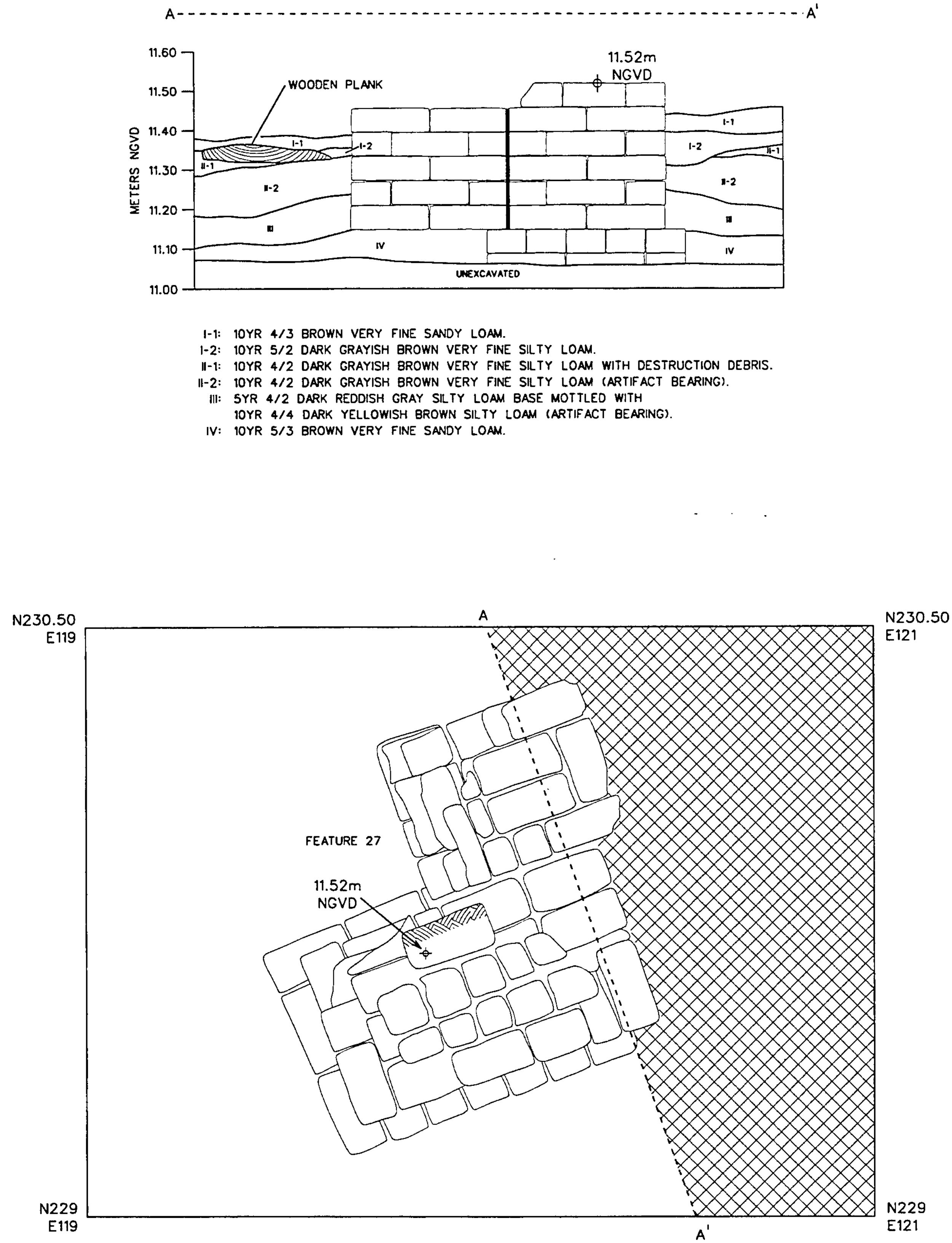


Figure 96. Plan and profile views of piers connecting the core and the north wing of the Main House. Block E, Unit E/13, Feature 27.

was composed of two parts; the north wing portion was not an integral part of the original core pier.

The nineteenth century stratigraphic sequence began with a layer of destruction debris (Stratum II, Level 1) and late midden (Stratum II, Level 2). These had been mixed at the time of destruction; artifact density was high, and included brick and mortar fragments, nails, ceramics, glass, and bone. Below this stratum was a layer that incorporated brick, mortar, charcoal, coal, and a low density of ceramics, nails, glass, and bone (Stratum III).

Stratum IV was the alluvium deposited by the mid-century flood, and in this area of the site the flood deposit was completely sterile. The north wing portion of Feature 27 was constructed on top of this stratum, at an elevation of approximately 11.15 m NGVD; the core portion of the feature continued to the base of this level (Figure 96), and rested at an elevation of approximately 11.05 m NGVD.

Unit E/9

Feature 35 was investigated in Unit E/9 (Figure 97). This north wing pier was located on the eastern wall of the structure. Only three courses in height, most of this brick pier had been removed at the time of destruction, and the surface of the pier was below grade. The destruction layer was Stratum II; it included brick fragments and a very high density of plaster. Stratum III was part of the late midden deposit, and contained a low density of iron, nails, bone, and ceramics. Stratum IV was a lens of coal and slag, which also contained ceramics, bottle and window glass, and nails; it was temporally similar to Stratum III.

An apparent builder's trench, Feature 70, had been excavated into Stratum VI B, the flood deposit from mid-century (Figure 97). The pier was seated within Feature 70, which then was filled with soils designated Stratum VI A. These soils contained a low density of cultural materials, including ceramics, nails, and glass. The top of Stratum VI B was consistent with the elevation of the flood layer elsewhere on the site, at approximately 11.20 to 11.25 m NGVD. The soils of this stratum contained only three small brick fragments and a mortar fragment.

<u>The South Yard and the Cistern Features</u>

Cisterns

The cistern bases that flanked the core structure on its northwest and southwest corners both measured 1.8 m (5.9 ft) in diameter; each comprised six brick piers in circular configurations (Figures 76, 78, and 79). Slight differences in the spacing between the cistern bases and the core of the main house indicated that the cisterns may have been erected at different times, although the stratigraphic data indicate that they both were constructed prior to the mid-century flood, but after the core and south wing had been in use for a short period of time. The bricks of the cisterns were softer than the bricks of the piers, and crumbled more easily. Plaster recovered from the destruction layers, and in some cases still attached to the brick, indicated that the cistern piers had been protected by a coat of lime plaster, as were the piers of the north wing and the core.

The stratigraphic sequences associated with the cisterns were similar. The uppermost stratum was the destruction debris, which completely covered the cistern piers. Below this was Stratum III, a mixture of destruction debris and late midden; destruction activities and post-occupation disturbance (plowing in Block D) had spread the stratum across the pier area, covering most of the remains. A high density of cultural materials was recovered from the late midden, including bone, ceramics, glass, brass and lead objects, buttons, tobacco pipes, and other household debris. Stratum IV was the mid-century flood deposit, which ranged in base depth between 11.15 and 11.2 m NGVD, and that averaged 9 cm (3.5 in) in thickness. Directly below the flood layer was the early midden, Stratum V. This was characterized by concentrations of brick chips, charcoal, and coal, with moderate densities of ceramics, glass, bone, and other household debris. The cistern piers were constructed during the deposition of this midden, and some of the piers rested on top of early nineteenth century debris. The base elevations of the piers varied slightly, but averaged approximately 11.10 m NGVD. The core piers (Features 89 and 96) adjacent to the cisterns had base elevations of 10.99 m NGVD (Feature 96), and 10.98 m NGVD.

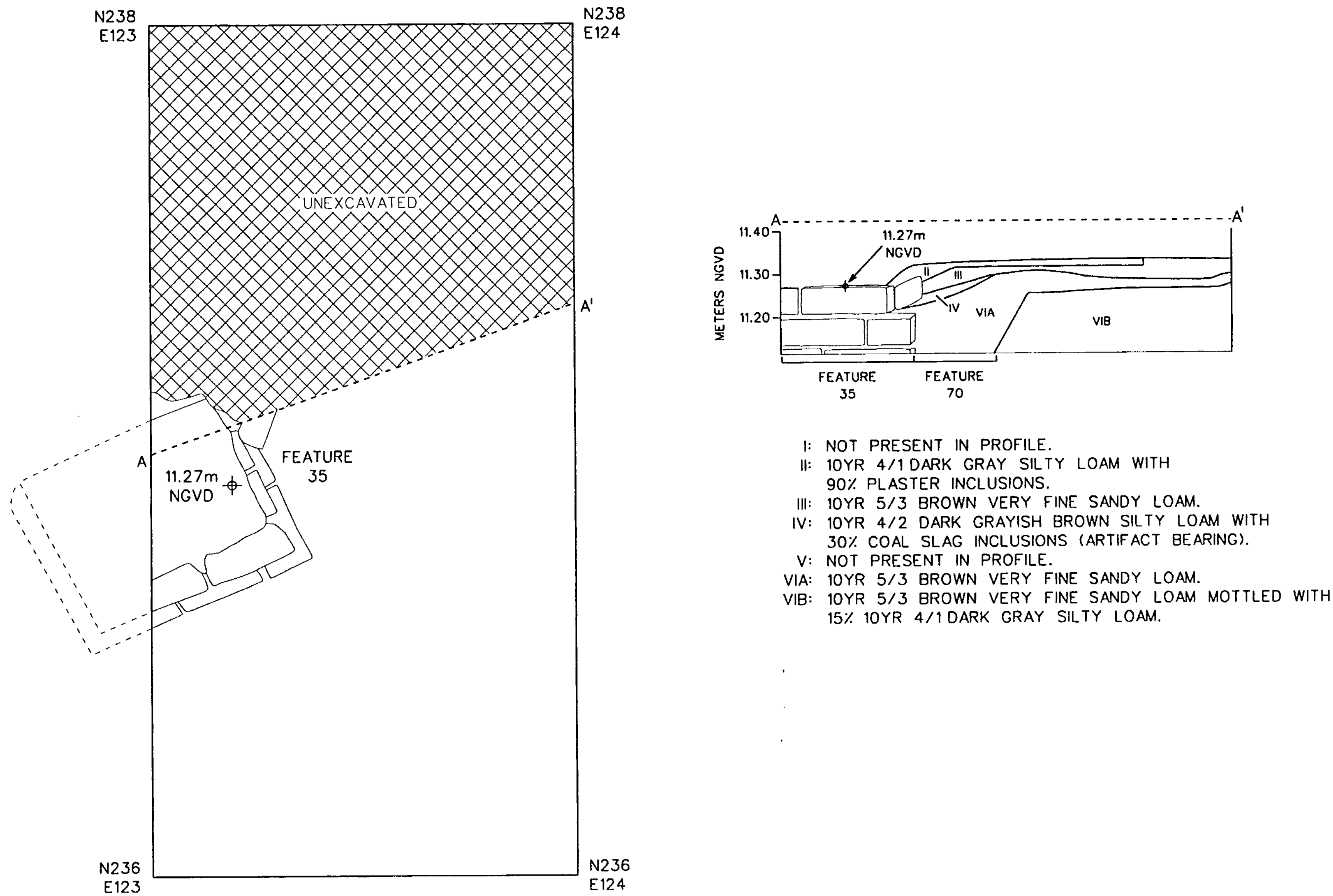


Figure 97. Profile and plan views of a brick pier from the north wing of the Main House. Block E, Unit E/9, Features 35 and 70.

South Sill Features

In Block D, a wooden sill (Feature 248) and four flanking posts (Features 249, 250, 252, and 255) were located in the ell formed by the core and the south wing of the main house (Figures 76, 98, and 99). These features were part of an unidentified wooden construction that had been built using the same methods as those of Structure 1 in the Outbuilding complex. Feature 248 was a still intact cedar beam, measuring approximately 20 x 14 cm (7.87 x 5.5 in; Figure 99). The post features (Features 249, 250, 252, and 255) contained intact wood, subsequently identified as cypress. The associated stratigraphy indicated that the beam had been placed prior to the deposition of the flood deposits in 1851 (Stratum IV on Figure 98); it was seated in the soils of the earliest midden (Stratum V). The base of Stratum IV, and the probable level of grade at the time of the placement of Feature 248, was at an elevation of 11.05. The stratigraphic evidence indicated that the beam had been placed contemporaneously with the attachment of the south wing to the core. Although the intended function of these features is unknown, it is possible that Feature 248 formed the sill for a stairway to the newly attached south wing. It also may have been part of a shed structure in the ell of the core and the south wing.

Unassociated Features

Feature 90

An oval pit feature, measuring approximately 2.5 m (8 ft) north to south, and 1.12 m (3.68 ft) east to west, was investigated during excavations in Block D (Figure 100). Strata I and II of the feature fill were post-occupational fill; Stratum III corresponded to the late midden deposit that surrounded the feature at the time of excavation. Stratum III contained a moderate density of ceramics, glass, nails, and shell; it was similar in character to the late midden in other areas of the site. Stratum IV contained a low density of glass, ceramics, nails, brick, and bone, which appeared to have accumulated gradually. The base of the feature was at an elevation of approximately 10.71 m NGVD. There were no clear indications of the function of Feature 90, and no specific date for its original excavation was ascertained. The stratigraphic evidence suggested that it had been open at the time of site abandonment, and that it had been left open after site destruction.

Feature 194

Feature 194 was a well-preserved, cypress wood well shaft, located at low water on the banks of the Mississippi River, east of Block E (Figures 70 and 101). Despite its excellent preservation, its location suggested that it had been displaced during bank erosion; Feature 194 did not maintain enough stratigraphic integrity to determine any temporal associations. The well shaft was approximately 1.4 m (4.59 ft) in depth, and it contained a very light density of nails, glass, ceramics, and brick fragments. Also recovered were the wooden staves, fiber bindings, and iron chains from two wooden buckets.

Summary of the Main House Complex

The Main House complex comprised the core structure, the south wing, the north wing, the north and south cisterns, and two unassociated features (Feature 90 and Feature 194). The stratigraphic associations of these structures allowed more construction of a relatively fine-grained temporal sequence for construction and occupation in the main house area. The first two structures to be built were the core of the main house, and the south wing. The core was a large structure, raised on piers, that probably had galleries around all four sides. The south wing was constructed as an independent building, and later attached to the core as a wing. This attachment took place in the 1830s or 1840s, contemporaneous with the construction of the two cisterns that flanked the core structure. The north wing was added after mid-century, and postdated the flood of 1851. Designed so that it provided symmetry to the main house, it is likely to have been the work of the Allens, who purchased the plantation in the 1850s.

The Outbuilding Complex

The Outbuilding complex, approximately 30 m (98 ft) south of the Main House complex, comprised two structures. Designated Structures 1 and 2, these buildings originally were part of a small group of four outbuildings depicted on the 1883 Mississippi River Commission Chart. Cartographic overlays suggested that the other two

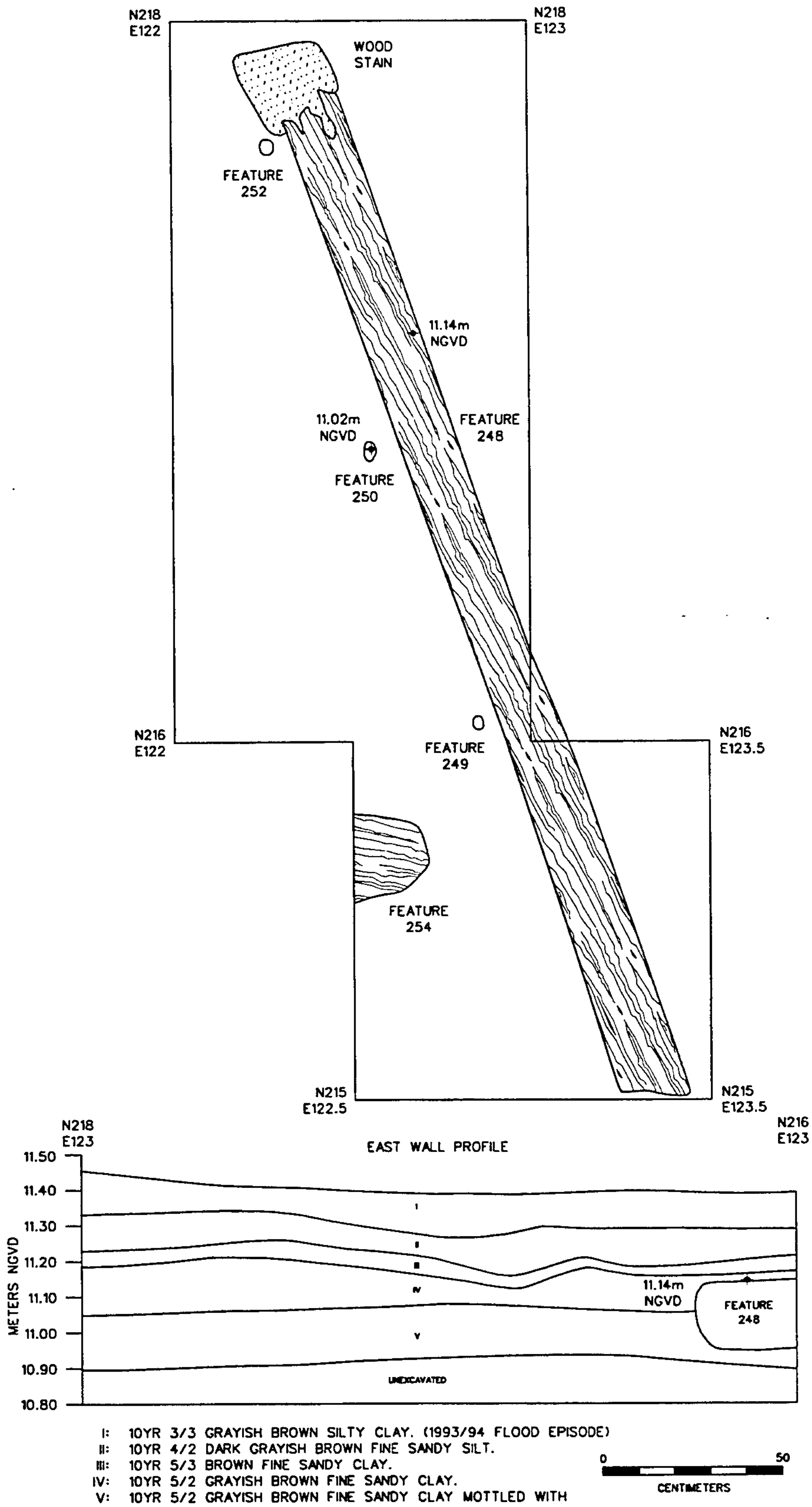


Figure 98. Plan view showing cedar beam and post features from the south wing of the Main House, and profile view showing elevation of beam. Block D, Units D/27, D/32, and D/33, Features 248, 249, 250, 252, and 254.

Figure 99. Cedar sill and associated posts in Block D.

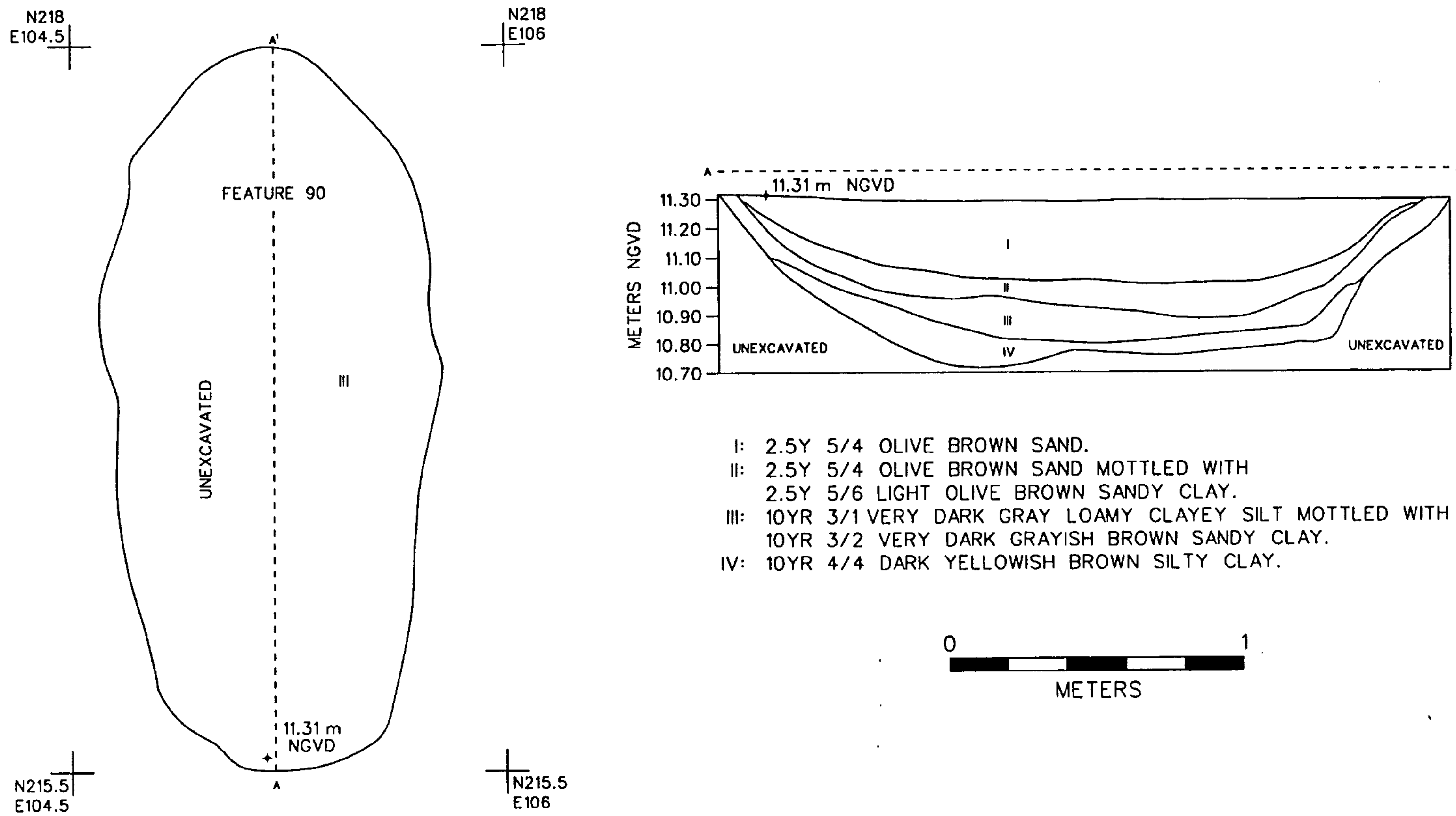


Figure 100. Plan and profile views of Feature 90, in Block D.

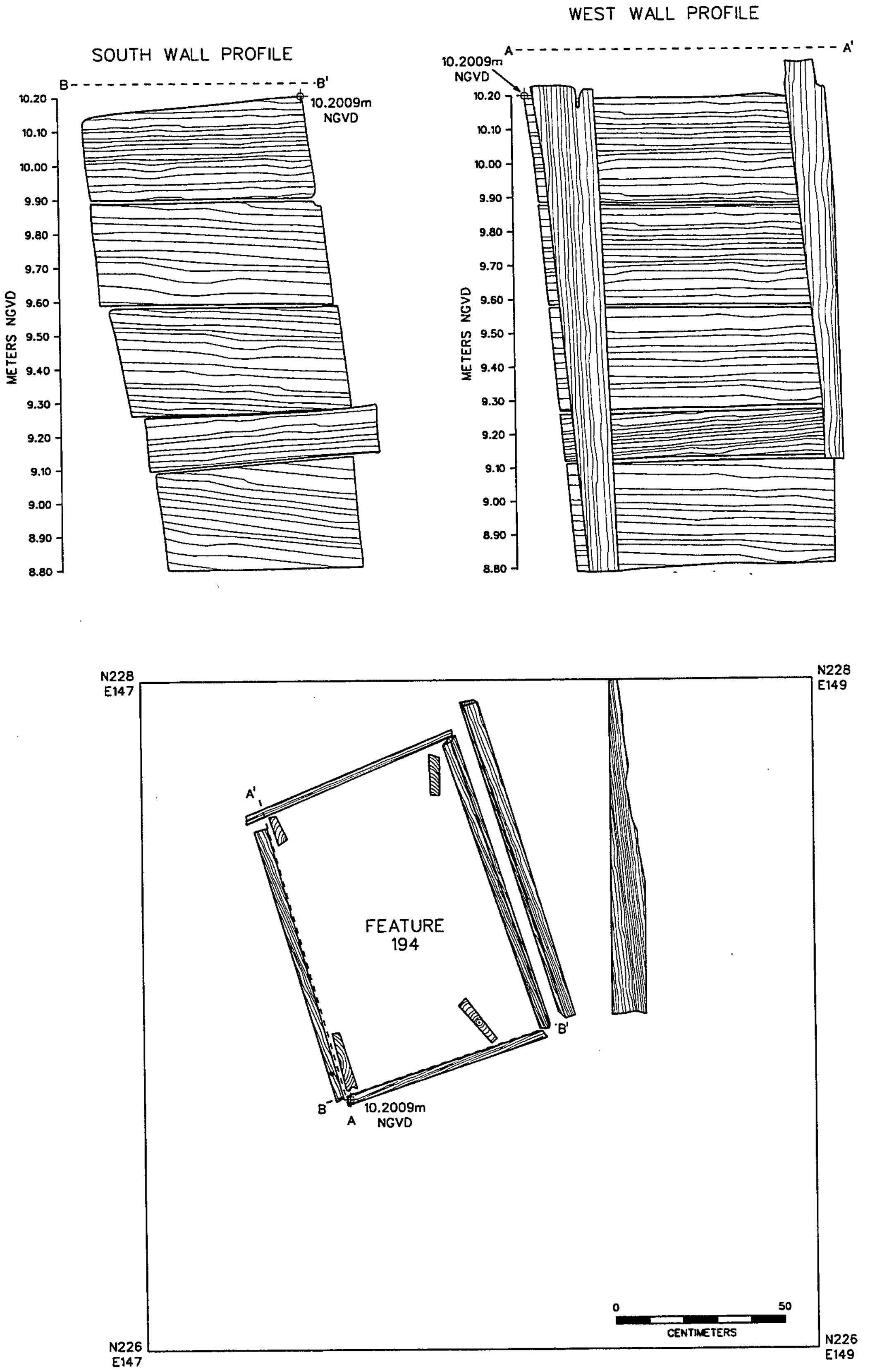


Figure 101. Plan and profile views of wood lined well (Feature 194), in Block E.

buildings in the complex had fallen prey to the steady erosion of the Mississippi River Bankline. Discussion of the archeological remains of Structures 1 and 2, including the observed stratigraphic associations, will be followed by a brief summary of the Outbuilding complex.

Structure 1 Features

Figure 102 presents a conjectural plan of the kitchen structure, based on the configuration of investigated features. The original structure had a packed dirt floor, and it was equipped with a wood and clay chimney and a clay hearth. Evidence of an episode of remodeling/reconstruction was apparent; this involved the construction of a substantial brick chimney, and the addition of a wooden floor. Figure 70 shows the locations of all identified features; these have been separated by temporal period on Figures 103 and 104, which present separate plans of the original Structure 1 features and the features resulting from renovation.

Structure 1 was constructed using earthfast techniques, including ground-laid sills and wooden posts set directly into the ground. The sills had been removed at the time of destruction, but shallow depressions still marked their original positions. Posts were used to form the corners of the building, and during the later occupation period, auxiliary posts may have been placed to support the floors of the structure. Posts also formed the superstructure of the original chimney. With the exception of the brick chimney foundation, and a few of the postholes that retained fragmentary wood, all features associated with Structure 1 were recognizable only as soil stains. These features and the associated stratigraphy are described in detail below.

Sills and Structural Posts

The sill depressions identified during excavations at Structure 1 included Feature 150, Feature 146/155, and Feature 209 (Figure 103). Feature 150, the sill that formed the south wall of Structure 1, had the best archeological definition, and it was visible for most of its length. Feature 146/155 defined the western wall of the structure; it was far more ephemeral than Feature 150. Feature 209 delimited the northern wall, and only was visible along portions of its length. The sill beams were not set in excavated trenches; rather, the depressions that were visible were the effect of compression of the underlying soils.

The corners of Structure 1 appeared to have been formed by the attachment of the sill beams to ground-set posts. The southwestern corner exhibited the best preservation of this post and sill arrangement (Figures 103 and 105). Feature 216 was the join at the intersection of Features 150 and 146/155, while Feature 124 was located in the interior corner of the two sills, and served as a stabilizer. The sills were laid on grade, with their top surface at an elevation of approximately 10.9 m NGVD; the posts were seated to a depth of 10.4 m NGVD. In the northwest corner of Structure 1, Feature 147 was identified as the interior bracing post at the intersection of Features 146/155 and 209 (Figure 106). The base elevation of Feature 147 was 10.4 m NGVD.

The stratigraphy associated with these primary structural features illustrated the chronological relationship between Structure 1 and the Main House complex. As at the Main House complex, two midden layers and a fluvial deposit from the mid-nineteenth century were the major determining strata. Figure 107 shows a stratigraphic profile of sill Feature 150. The differing stratigraphy of the interior and exterior of Structure 1 was apparent. Strata I and II do not appear on this figure; these strata were composed of the destruction debris and the late midden deposit that was spread relatively evenly across the outbuilding area. Strata III and IV were the flood deposits; the profile in Figure 107 clearly shows that this deposit did not extend into the interior of Structure 1; rather it was stopped by the standing wall of the building. The elevation of the base of Stratum III (10.92 m NGVD) corresponded roughly to the range of elevations recorded for this flood stratum at the Main House complex (between 11.00 and 11.25 m NGVD). The early, pre-flood midden on the exterior of Structure 1 was labeled Stratum V. The interior early midden did not have the same discrete definition; it was divided from later deposits by the remains of the plank flooring. The original floor surface of the Structure 1 interior (10.76 m NGVD) was roughly equivalent in elevation to the exterior surface (10.81 m).

The stratigraphic sequence at the northwestern corner of the structure did not show a clear division between interior and exterior (Figure

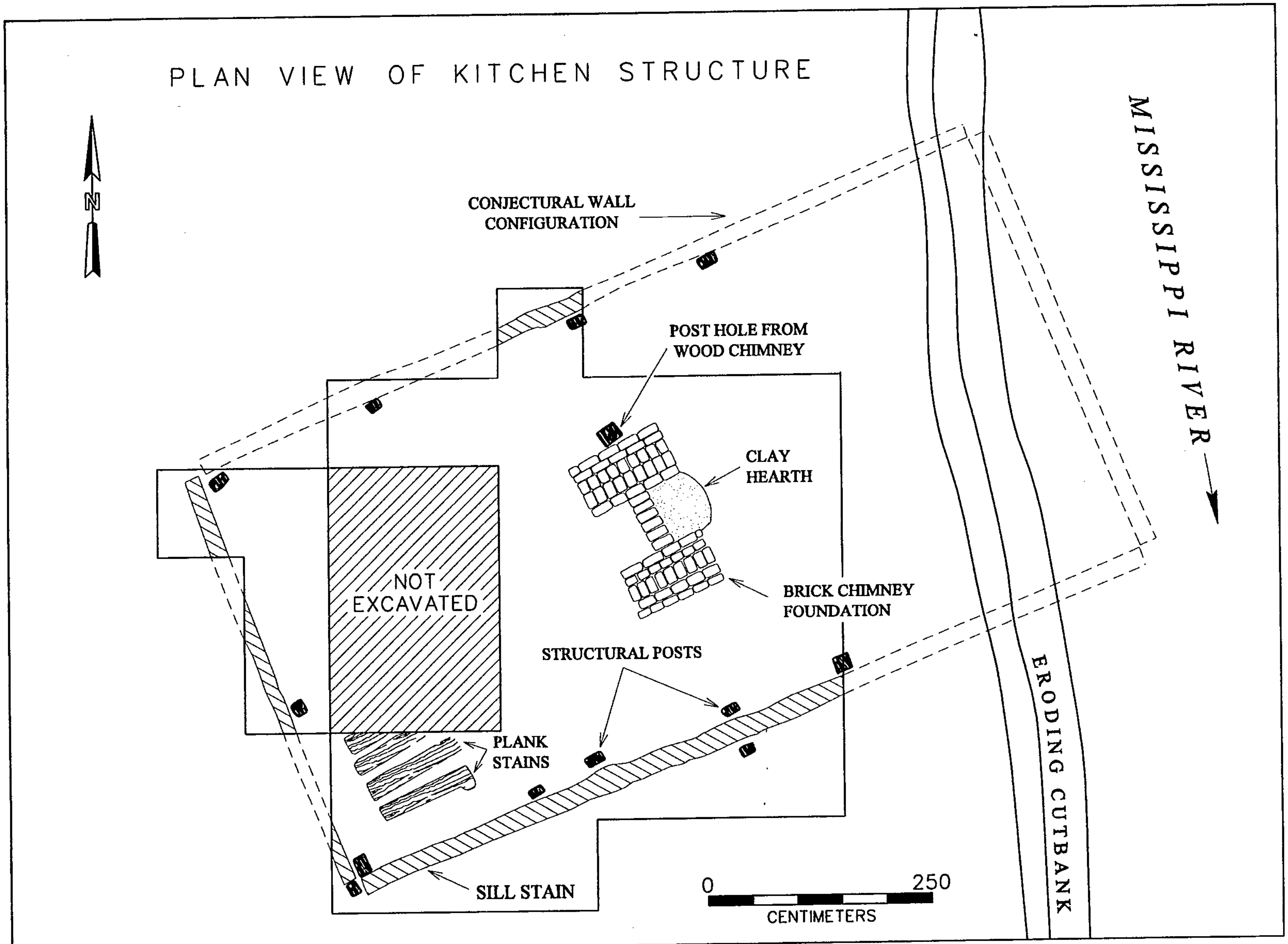


Figure 102. Conjectural configuration of Structure 1 in the Outbuilding complex.

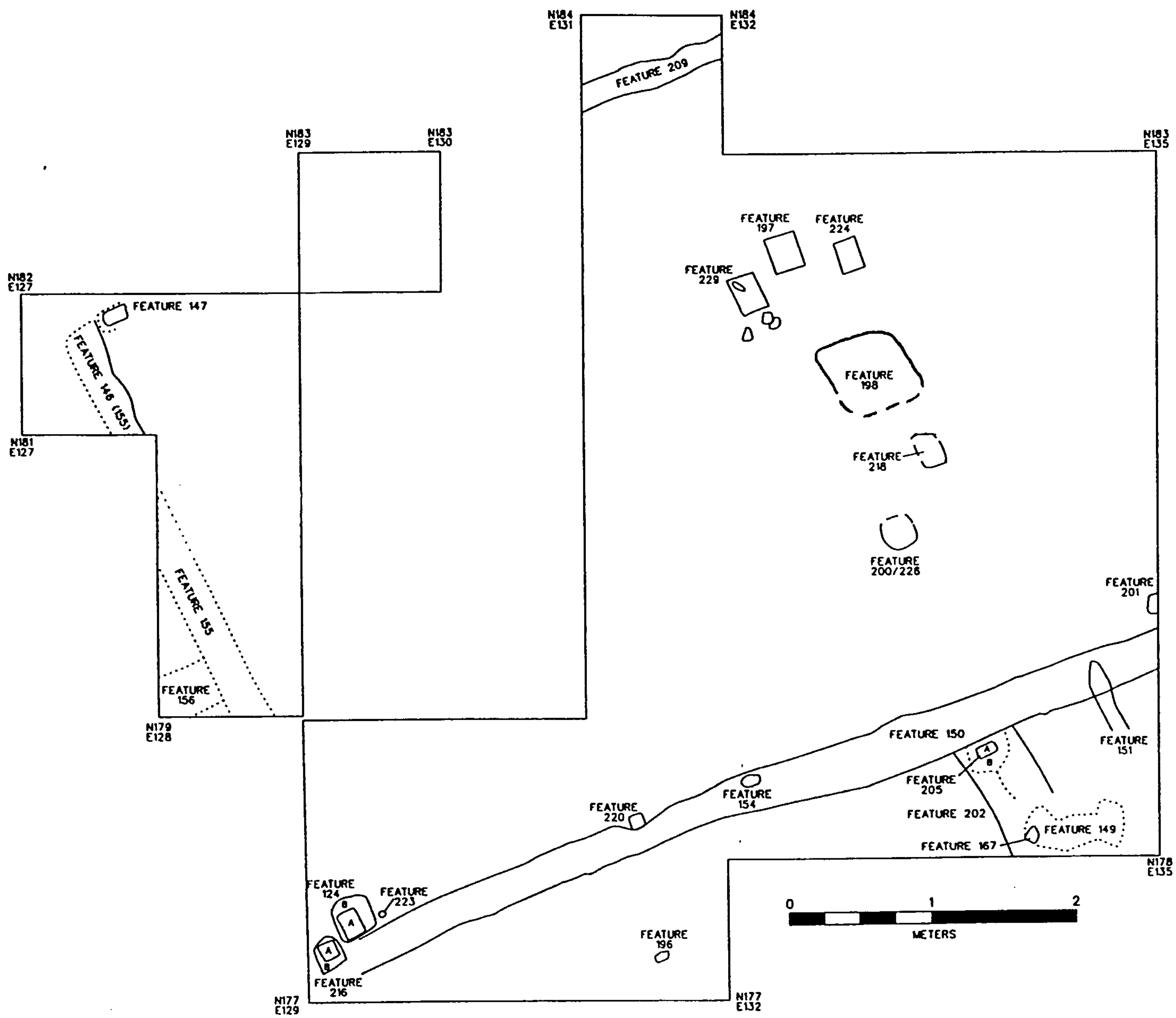


Figure 103. Plan of features attributed to the early period Structure 1 in Block C.

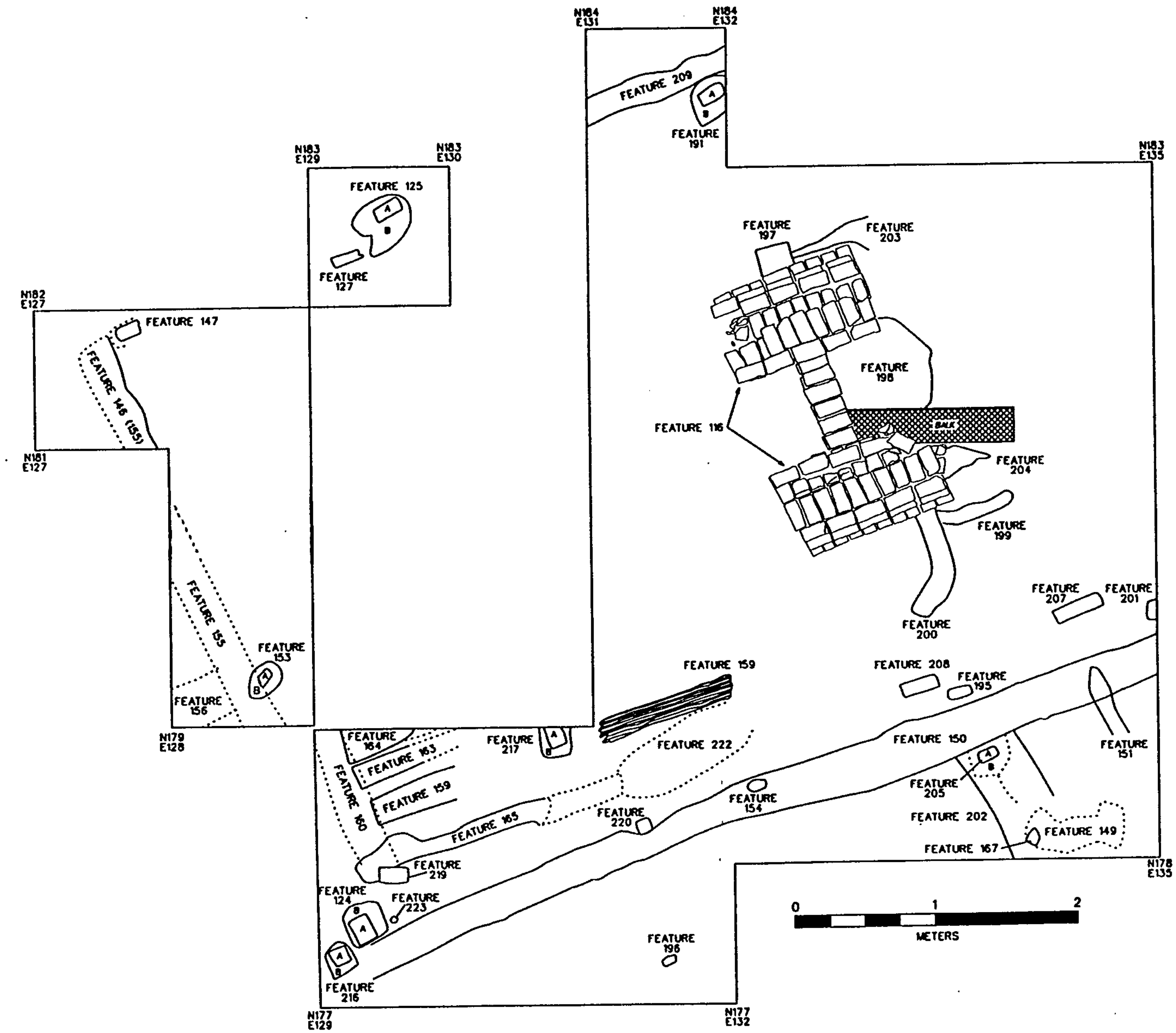


Figure 104. Plan of features attributed to the late period Structure 1 in Block C.

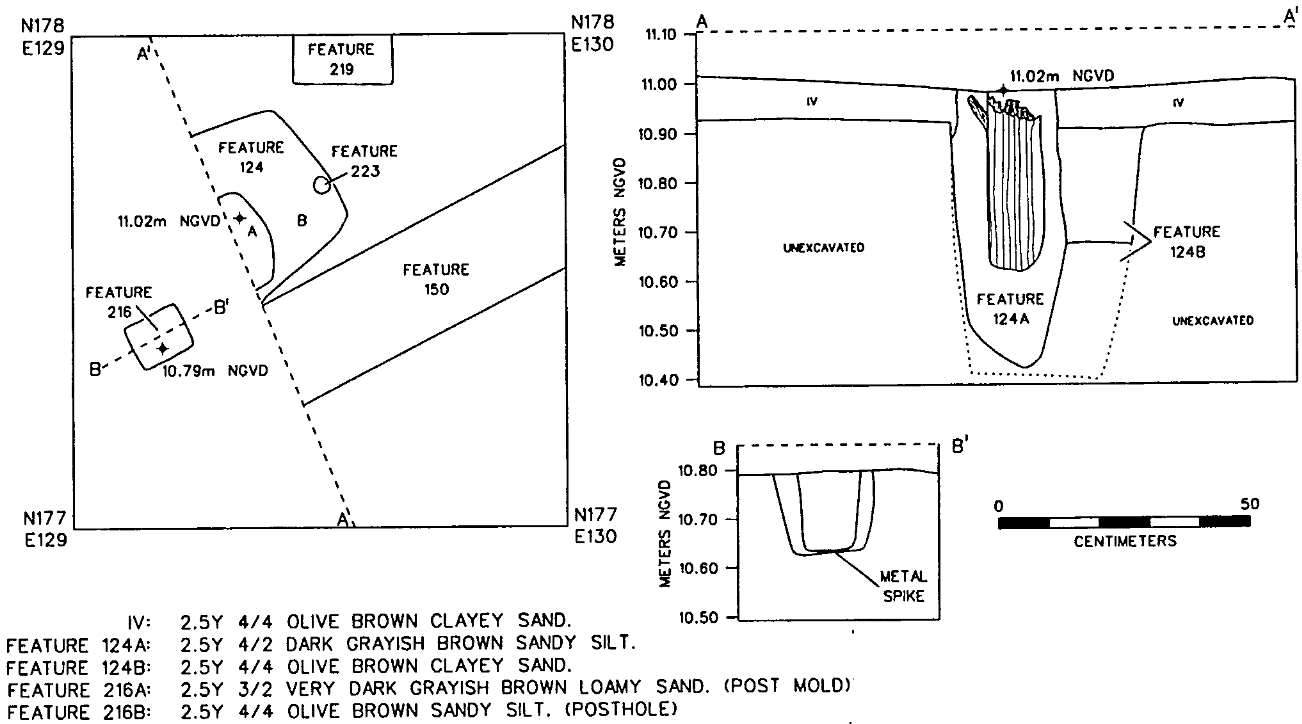
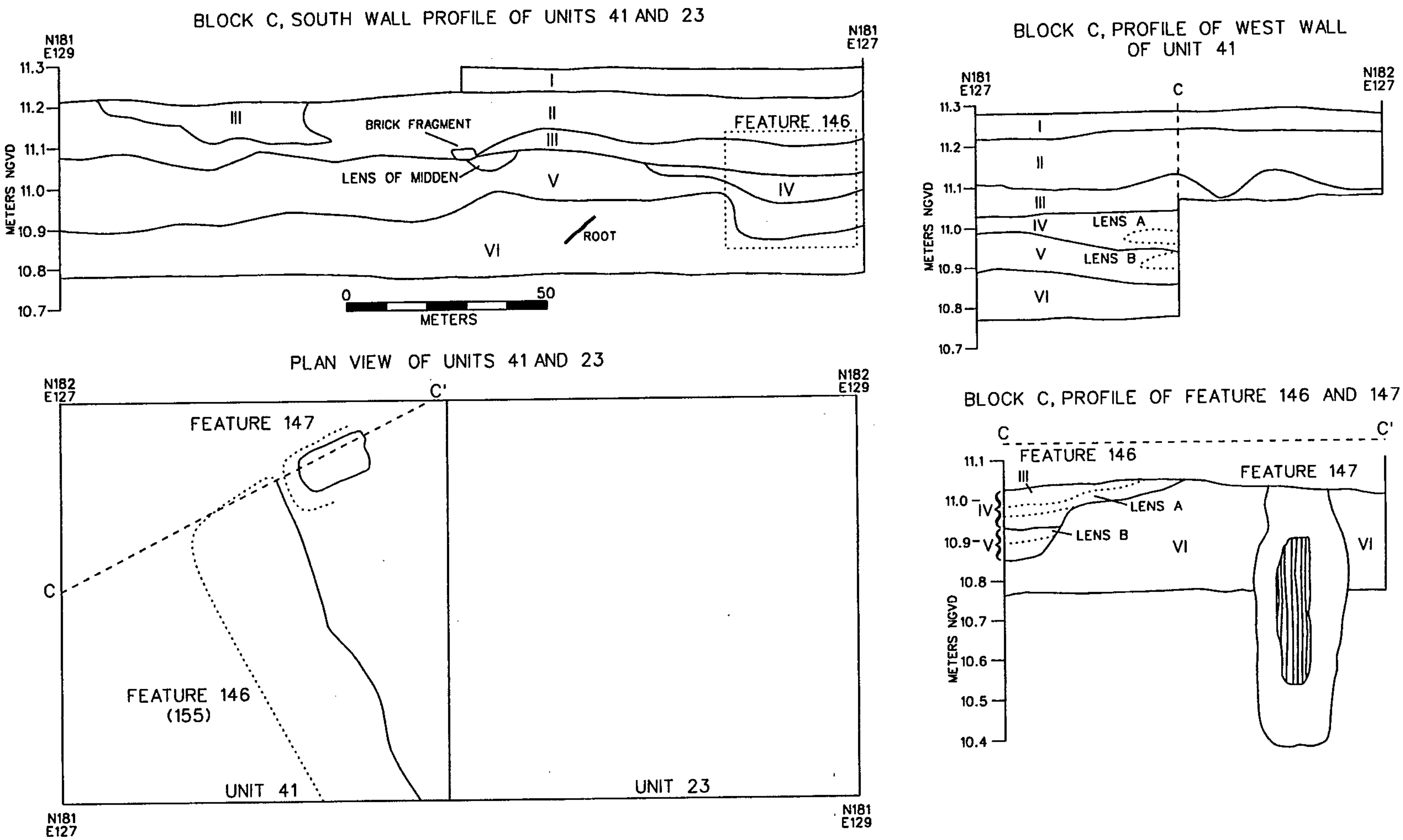
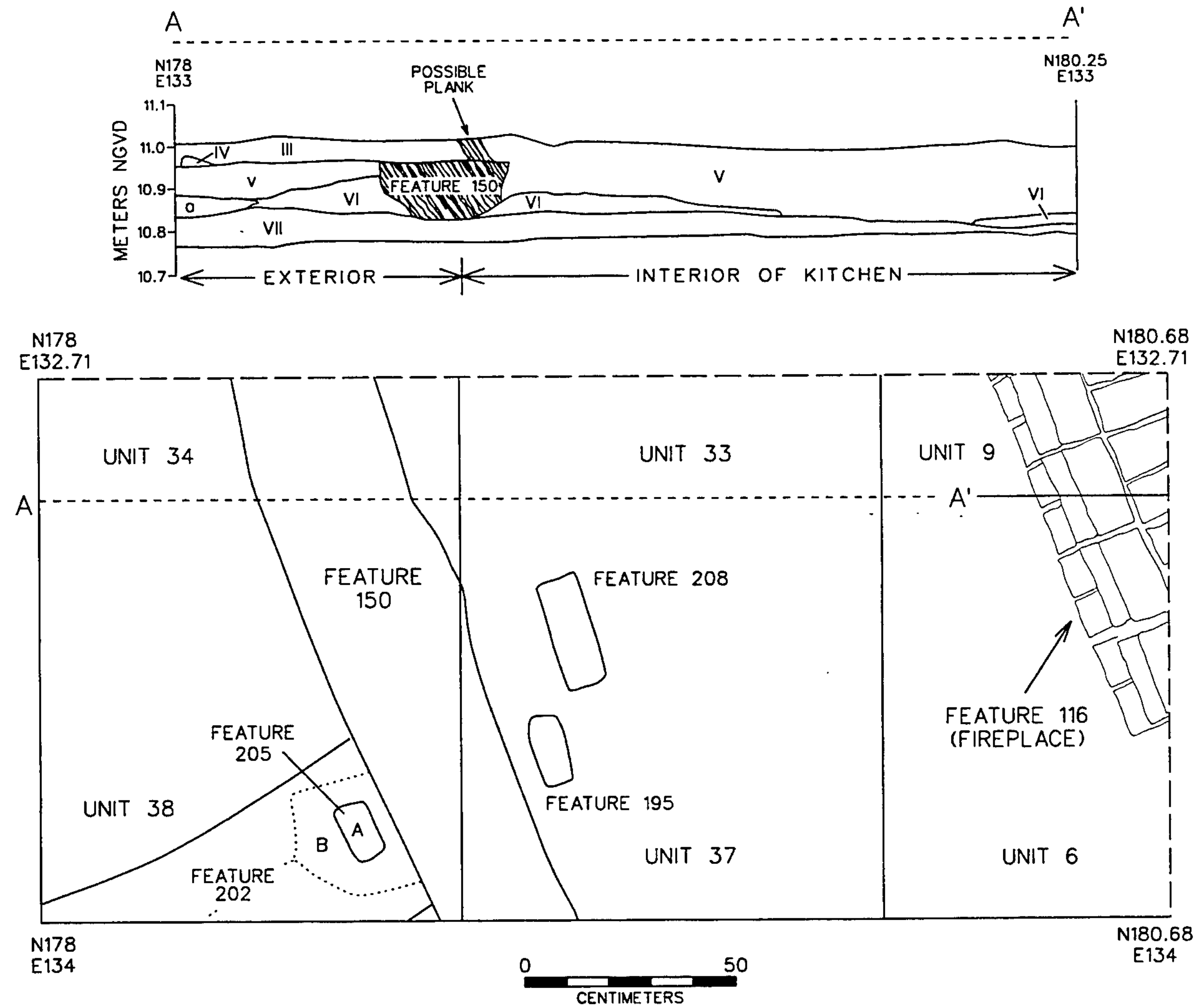


Figure 105. Plan and profile views of the southwestern corner of Structure 1 in the Outbuilding complex. Block C, Unit C/15.



STRATUM I: 10YR 5/3 BROWN SILT WITH LENSES OF N4/ DARK GRAY GLEY (RECENT ALLUVIUM).
STRATUM II: 10YR 3/2 VERY DARK GRAYISH BROWN SILT (MIDDEN).
STRATUM III: 2.5Y 4/2 DARK GRAYISH BROWN SILT.
STRATUM IV: 10YR 3/2 VERY DARK GRAYISH BROWN SILT (MIDDEN).
STRATUM V: 10YR 4/2 DARK GRAYISH BROWN SILT.
STRATUM VI: 10YR 4/3 BROWN CLAYEY SILT.
LENS A & B: 2.5Y 4/2 DARK GRAYISH BROWN SILT.
FEATURE 147: HOLLOW POST-MOLD CAST WITH A CENTRAL CORE OF DECAYED WOOD.

Figure 106. Plan and profile views of the northwestern corner of Structure 1 in the Outbuilding complex. Block C, Units C/23 and C/41, Features 146 and 147.



STRATUM III:	2.5Y 4/3 OLIVE BROWN SILTY SAND (ALLUVIUM).
STRATUM IV:	2.5Y 4/2 DARK GRAYISH BROWN SANDY SILT (ALLUVIUM).
STRATUM V:	2.5Y 4/2 DARK GRAYISH BROWN SILT (MIDDEN).
STRATUM VI:	2.5Y 4/2 DARK GRAYISH BROWN SANDY SILT (ALLUVIUM).
STRATUM VII:	2.5Y 4/2 DARK GRAYISH BROWN SILTY CLAY (STERILE).
a:	LENS OF 2.5Y 4/2 DARK GRAYISH BROWN SILT.
FEATURE 150:	2.5Y 4/2 DARK GRAYISH BROWN SILT.

Figure 107. Plan and profile of the south wall sill of Structure 1 (Feature 150), showing the stratigraphy of the interior and exterior of the structure. Block C, Units C/6, C/9, C/33, C/34, C/37 and C/38.

106). The evidence of the east-west sill beam (Feature 146) was ephemeral, and the soils in the immediate vicinity showed some mixing, possibly during destruction, when the sill beams were removed. The flood deposit appeared as Stratum III, but it clearly had suffered disturbance during destruction. The depression from the structural sill (Feature 146) was clearest at elevations between 10.85 and 11.0 m NGVD, within the nearly sterile Stratum VI.

Chimney Features

Prior to the construction of the central brick chimney foundation (Feature 116), Structure 1 had been equipped with a simple chimney and hearth constructed of wood and clay, with a clay hearth (Feature 198). Removal of the majority of Feature 116 revealed the configuration of the features associated with this early hearth and chimney (Figure 103). The five identified posts (Features 197, 224, 229, 218, and 234) that formed most of the framework of the early chimney measured approximately 19 x 23 cm (7.5 x 9 in), and were seated at an elevation of approximately 10.45 m NGVD, or 28.6 cm (11.24 in) below the contemporary ground surface (Figure 108). It is likely that a third post was present on the south side of the hearth, corresponding to Feature 229. Centrally placed between these wooden uprights was a packed clay hearth (Feature 198) that exhibited intensive fire-reddening, and that contained abundant charcoal inclusions (Figure 103). Burned and calcined bone, ceramics, and glass were recovered from the surface of this feature. The early chimney probably was constructed with clay infill; while few discrete fragments of this material were recovered during excavation, the fill of Feature 197 contained quantities of burned clay, and much of the central area of the Structure 1 was covered by a layer of deteriorated daub.

The brick chimney foundation (Feature 116) (Figures 104, 109, and 110) sat directly on top of the remains of the earlier hearth and chimney. Constructed of reused bricks, many broken and mismatched, the fireplace foundation measured approximately 2 m (6.56 ft) north to south, and each wing was 1.14 x 0.67 m (3.7 x 2.2 ft) in dimension.

During excavation, the underlying hearth (Feature 198) and portions of an earlier posthole (Feature 197) were visible underneath Feature 116. The northern half of the brick foundation was removed systematically to expose the early chimney features. Four profiles of the northern part of Feature 116 were drawn prior to its removal (Figure 111). Additionally, profiles were drawn of the soil balk that ran through the central portion of Feature 116 (Figure 112). These illustrated the stratigraphic relationships between the brick chimney and the surrounding soils.

Figure 111 clearly illustrates the nature of the brick used in the construction of Feature 116. Three to four courses of brick remained after destruction, and all courses exhibited broken and mismatched construction materials. The brick foundation was constructed directly on top of the early hearth, Feature 198. Stratum III lay directly above the earliest occupation level; it consisted of the deteriorated clay infill of the early chimney. The surface of Stratum III, in areas where the weight of Feature 116 had not compacted it, was extremely uneven and undulating. This deposit contained small amounts of brick, mortar, and charcoal, and those areas directly above the hearth (Feature 198) contained bone, shell, glass, and a ceramic sherd.. Beneath this deposit, the surfaces of posthole Features 197, 224, and 229 were exposed.

Figure 110 shows the stratigraphic sequence, from construction to destruction, in the central chimney area of Structure 1. The late midden and destruction debris was designated as Stratum II, and demonstrated a great deal of mixing. The clay infill layer, Stratum III was located below this midden deposit, and below Feature 116; these soils also filled Feature 218, the posthole from the earlier wood and clay chimney. Stratum VII was a sterile, dark gray silty deposit that may have filled areas next to the post.

Plank Flooring Features

Originally, the floor of Structure 1 was a packed dirt or clay surface, visible only as a thin, discontinuous, 2 - 3 cm (0.78 - 1.18 in) thick lens, at a typical elevation ranging from 10.95 to 10.97 m NGVD (level 5 of Units 33 and 34). This lens had a high ash content; the small amount of de-

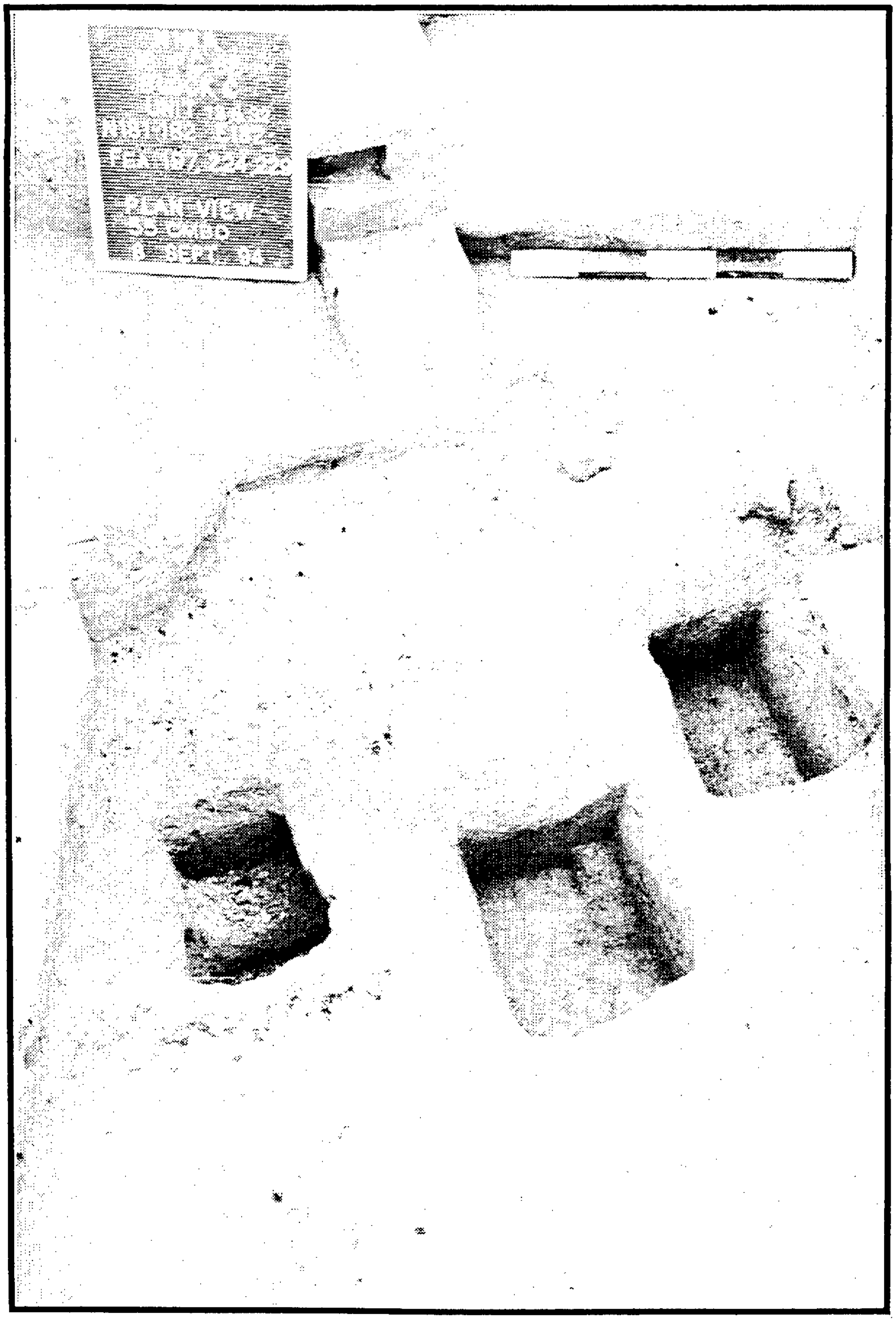


Figure 108. Postholes associated with the wood and clay chimney in Structure 1 of the Outbuilding complex. Block C, Units C/13 and C/32, Features 197, 224, and 229.

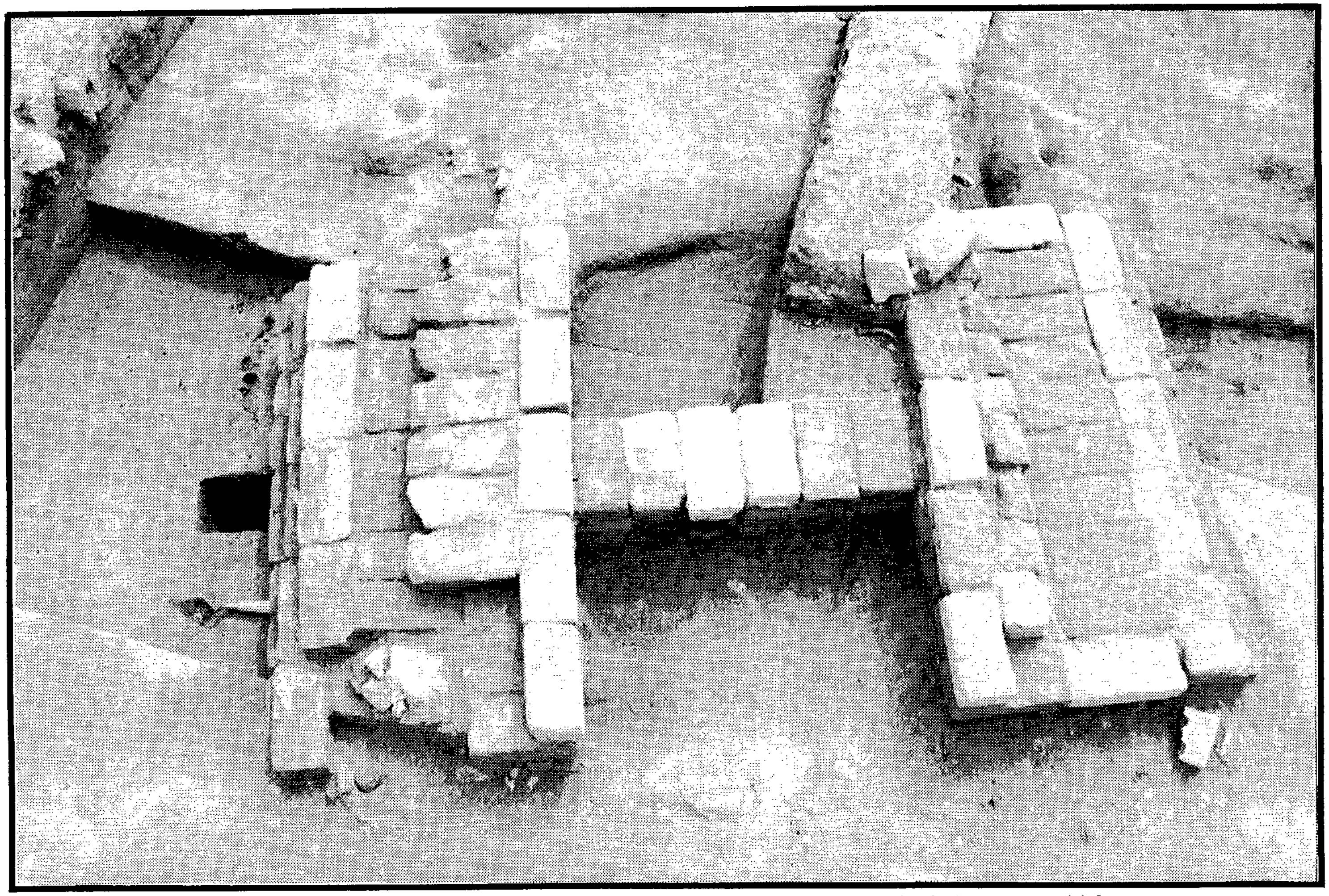


Figure 109. Brick chimney foundation in Structure 1 of the Outbuilding complex. Block C, Feature 116.

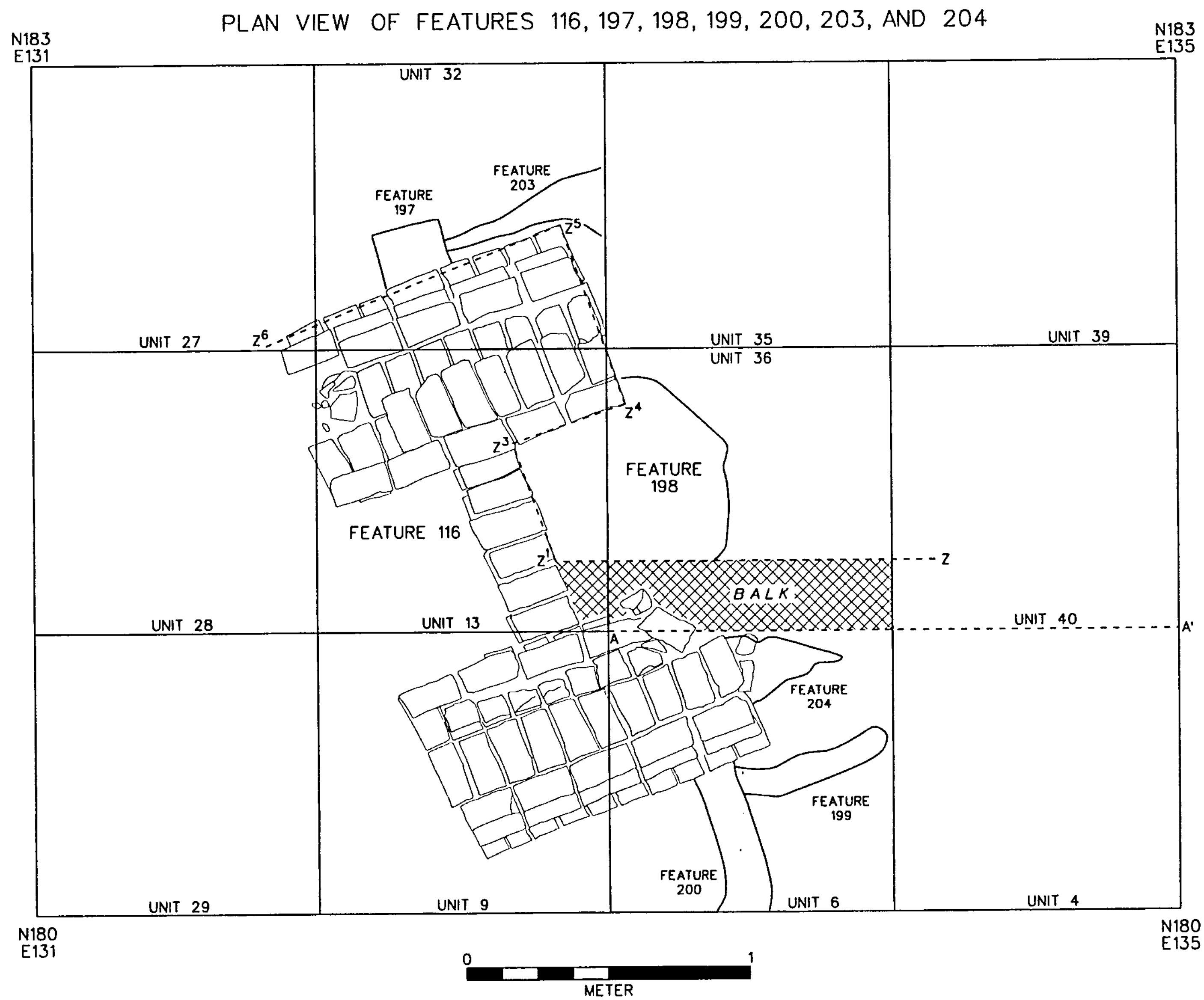


Figure 110. Plan view of the H-shaped chimney foundation (Feature 116) in Structure 1 of the Outbuilding complex. Note the placement of the clay hearth (Feature 198), and posthole (Feature 197) associated with the previous wood and clay chimney.

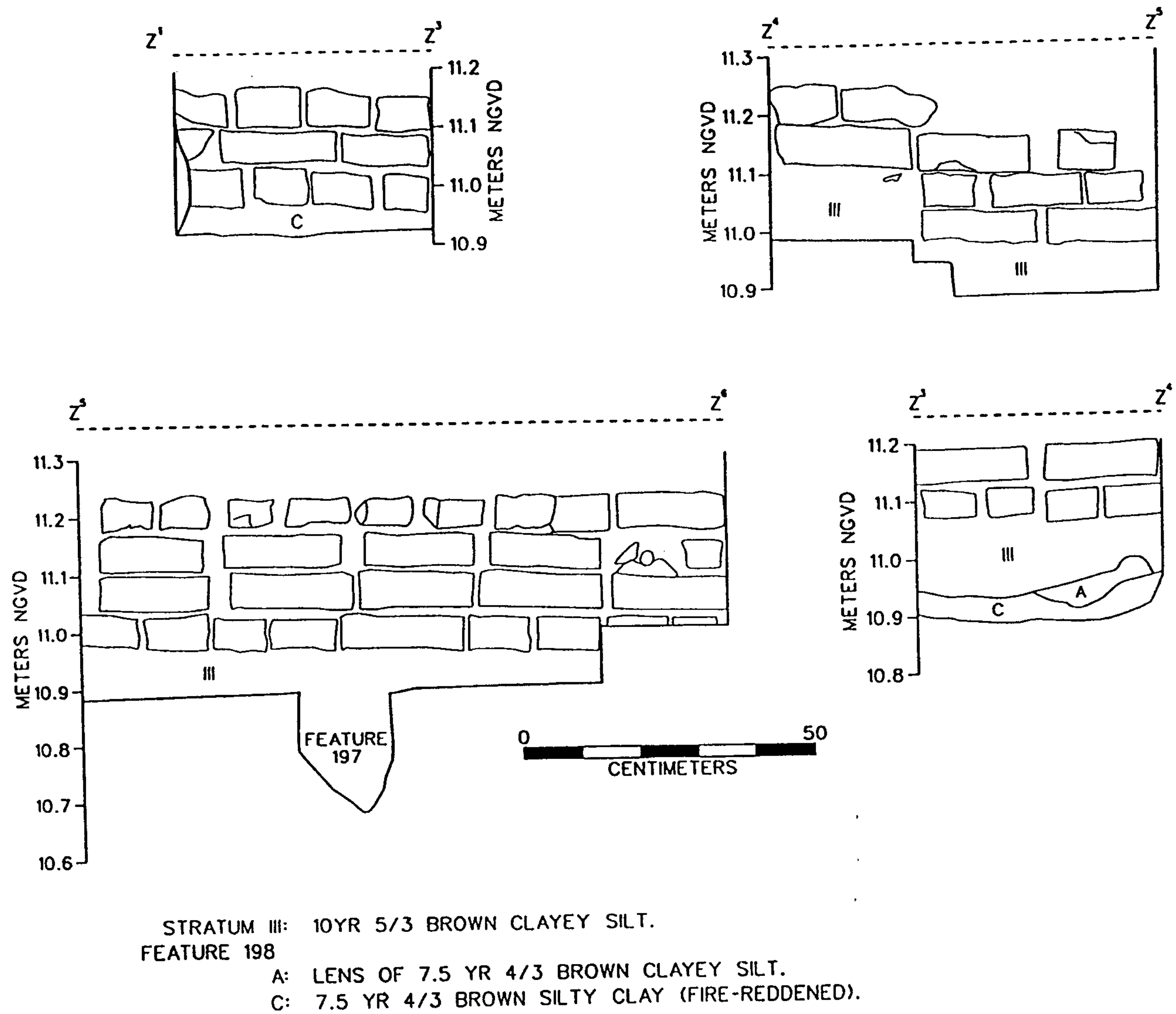
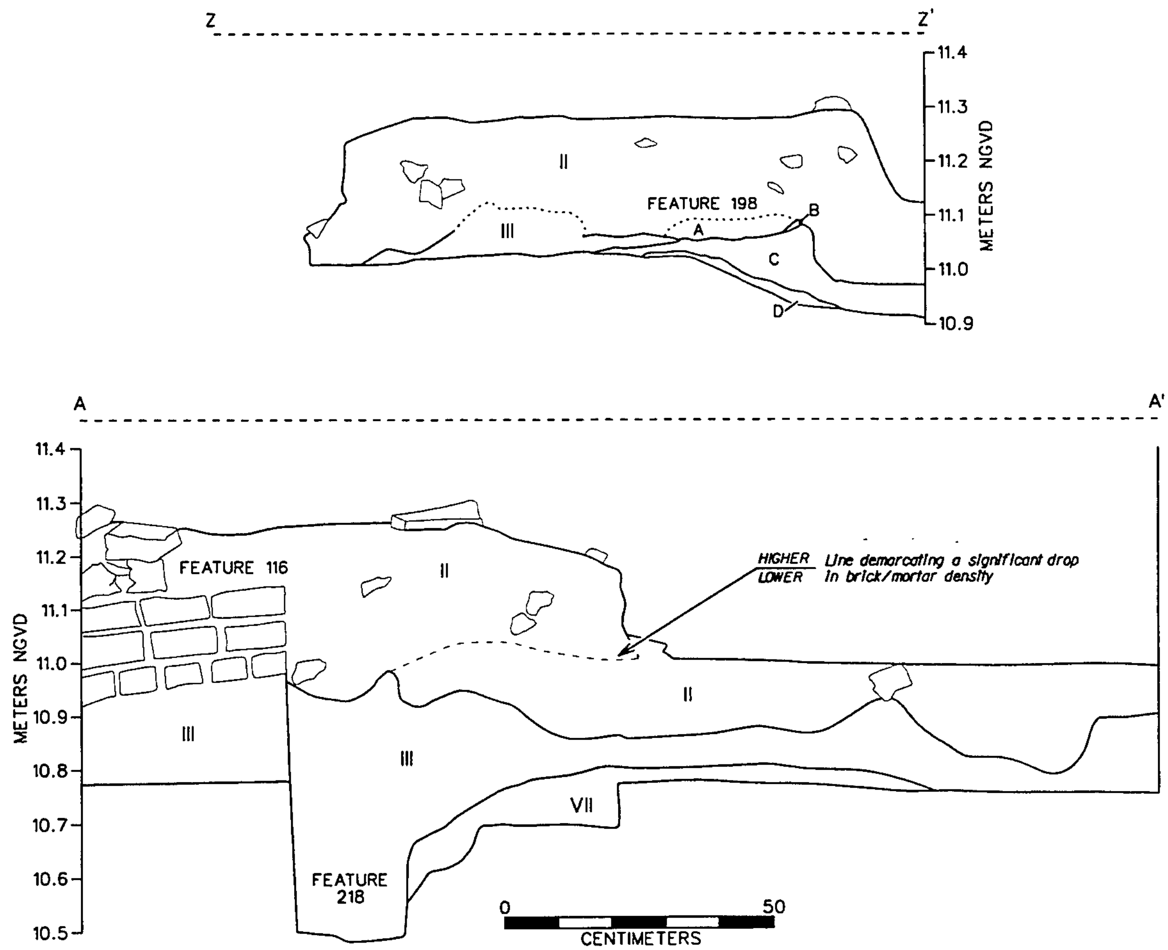


Figure 111. Various profile views of the brick chimney foundation (Feature 116) in Structure 1. Profile coordinates are shown in plan on Figure 112.



STRATUM II: 10YR 4/2 GRAYISH BROWN SILT WITH BRICK AND MORTAR.
STRATUM III: 10YR 5/3 BROWN CLAYEY SILT.
STRATUM VII: 10YR 4/2 DARK GRAYISH BROWN CLAYEY SILT.
FEATURE 198
A: LENS OF 7.5 YR 4/3 BROWN CLAYEY SILT.
B: LENS OF 10YR 5/4 YELLOWISH BROWN SILT.
C: 7.5 YR 4/3 BROWN SILTY CLAY (FIRE-REDDENED).
D: 10YR 5/4-10YR 4/4 YELLOWISH BROWN TO DARK YELLOWISH BROWN SILTY CLAY.

Figure 112. Profiles of the balk that intersected the brick chimney foundation (Feature 116) in Structure 1.

bris lying directly on top of it included ceramics, bone, fish scale, glass, an ax head, and nails. Some discrete daub samples were also collected.

Probably concurrent with the construction of the brick chimney (Feature 116), a wooden floor was installed in Structure 1. The clearest evidence of this plank flooring was four plank impressions (Features 159, 163, 164, and 165), aligned east to west, that survived in the southwest quadrant of Structure 1 (Figure 104). The tops of the plank features were at an elevation of 11.11 m NGVD. Feature 159 continued to the east; the eastern portion contained extensive amounts of charcoal. The top of this section was at an elevation of 11.16 m NGVD.

Support for the floor planking appeared to have been provided by beams and joists, which in turn were supported on wooden posts set into the dirt floor of Structure 1. Feature 160 was the impression of one of the supporting crossmembers; it ran parallel to the north-south wall of Structure 1 (Figure 104), and it was aligned with the ends of the plank features and with post Feature 219. Post features thought to have been associated with the floor included Features 219, 220, 154, 195, 201, 217, 153, 125, and 191 (Figure 104). Features 207, 208, and 127 may have been shallow impressions of floor joists (Figure 104). A profile of posthole Feature 195 (Figure 113) shows the elevation at which the post first was visible. This was consistent with the elevations of the floor plank features. The elevation and profile of Feature 208 suggested that these supports may have rested directly on the original floor surface.

Miscellaneous Features

A cluster of features associated with Structure 1 was exposed just south of the southern sill (Feature 150) (Figures 103 and 104). Features 151, 205, 202, 167, and 196 may have been associated with either a narrow porch or gallery, or with steps. Small posthole Features 196 and 167 were approximately 0.68 m (2.23 ft) from the south wall of the structure, a distance that would support the interpretation of a small porch. Feature 149 was an amorphous soil stain that was interpreted as a drip line. Either stairs, or the roof of a porch could have been responsible for this feature.

Summary of Structure 1

Structure 1 was an earthfast building constructed on wooden sills, with a wood and clay chimney and clay hearth, and a dirt floor. Probably originally constructed as one of the first structures at the site, the building later underwent renovations that included the destruction of the wood and clay chimney, the construction of a brick chimney, and the addition of a wood floor. The major chronological indicator for the site has been the presence of the flood deposit from 1851; unfortunately, although the flood stratum was apparent on the exterior of Structure 1, it was stopped by the standing walls of the building, and did not infiltrate the interior strata. While the elevations of the plank floor and the top of the flood deposit on the exterior were similar, it is uncertain if a direct correlation is possible. Artifactual evidence, however, makes it likely that the renovations took place after the flood, and possibly as late as emancipation in 1865. The building was destroyed at some time after 1883, when a surveyor for the Mississippi River Commission completed a sketch of the four outbuildings (see Chapter IV).

Structure 2 Features

The dimensions and construction details of Structure 2, the second of the two outbuildings investigated in Block C, were difficult to determine. The features that delineated Structure 2 (Figure 114) were far more subtle than those of Structure 1. Erosion to the east of the Structure 2 excavations was severe, and prevented the extension of excavations in that direction. To the west of the excavated portions of Structure 2, stratigraphic integrity had been compromised by the post-occupation construction of a levee and two drainage ditches (Features 14, 18, and 19) (Figure 70).

Exposed features suggested a two-room structure measuring approximately 6.4 m (21.09 ft) x 11.42 m (37.48 ft), slightly larger than the dimensions of Structure 1. Structure 2 appeared to have been constructed using methods similar to those used in Structure 1. Evidence was recovered for ground-laid sills and corner posts as the basic structural components, although no evidence was found for flooring support posts. A

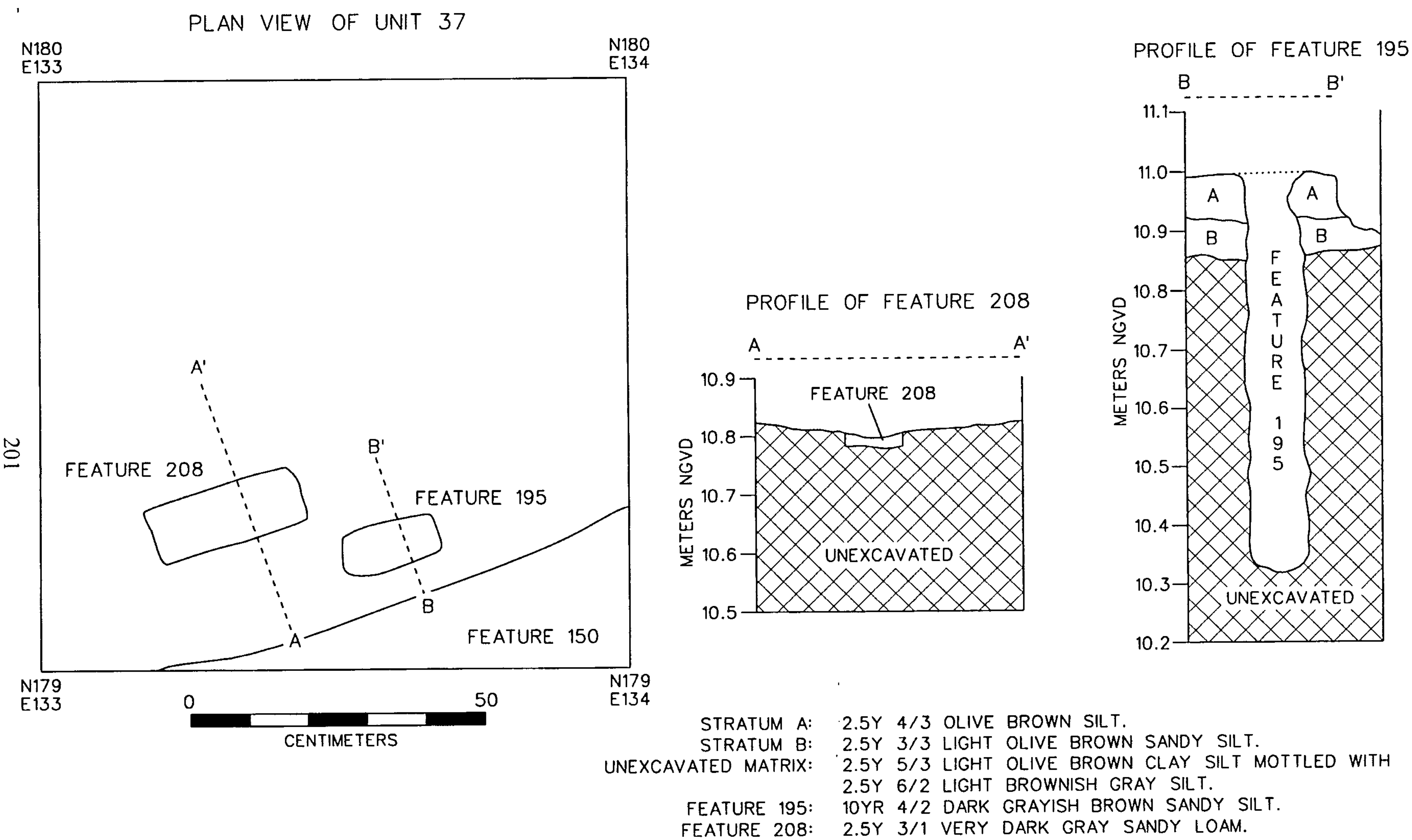


Figure 113. Plan and profile of features associated with the plank floor in Structure 1 In the Outbuilding complex. Block C, Unit C/37, Features 150, 195, and 208.

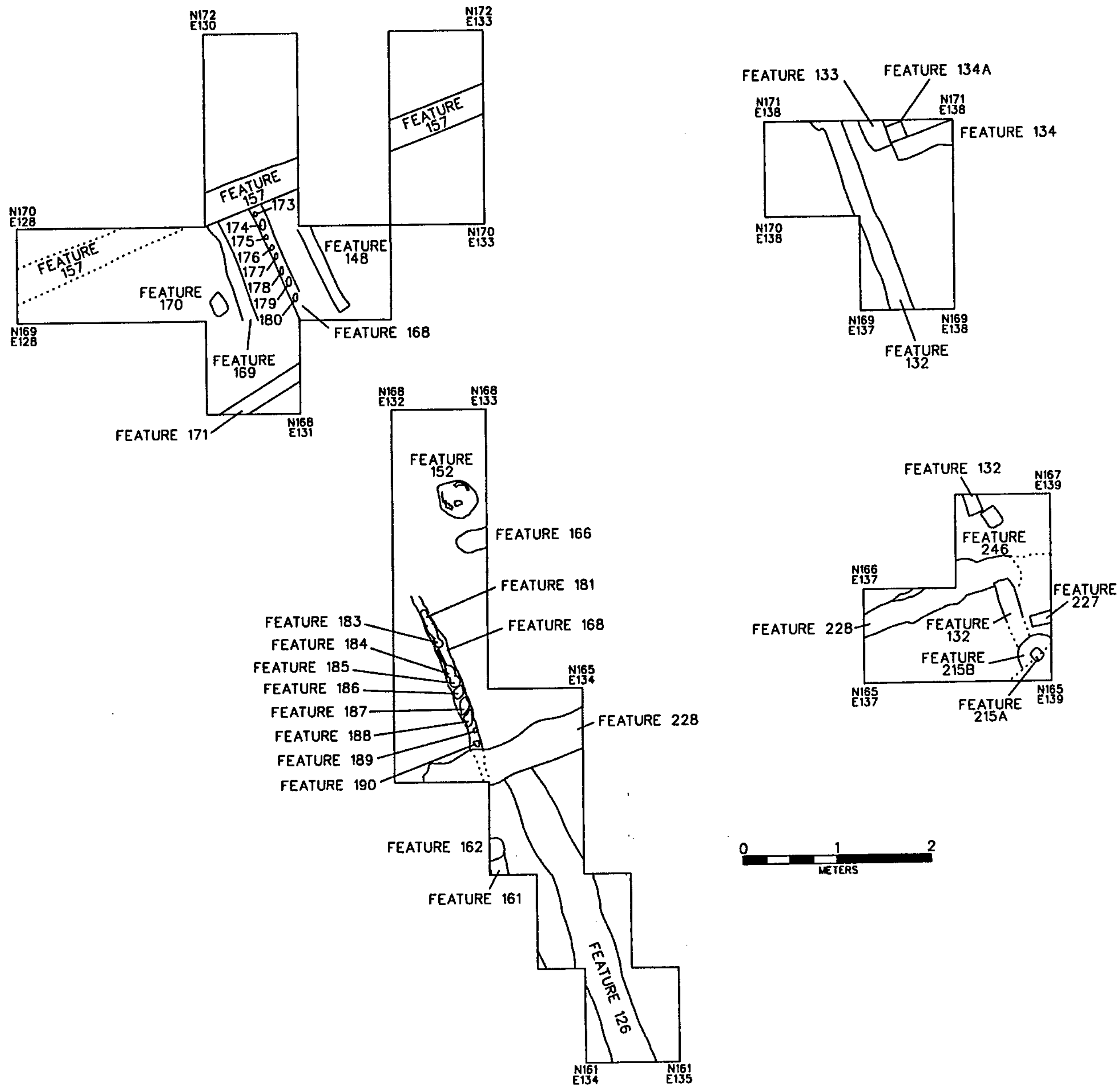


Figure 114. Plan of features associated with Structure 2, in Block C.

central, north - south partition wall was constructed using *piquette en terre* construction. This consisted of a shallow trench, with small stakes driven directly into the ground within the trench (Features 168, and 174-190) (Figure 115). There was no evidence of a central chimney or hearth, although a small circular firepit (Feature 152) was identified near the presumed center of the structure.

Sill and Post Features

The five identified sill features (Features 157, 228, 132, 133, and 134) were similar to those in Structure 1, but in most cases they were not as well defined. Feature 132 showed the clearest definition (Figure 116). Running from north to south, Feature 132 defined the presumed eastern wall of Structure 2. Approximately 20 cm (7.87 in) in width, Feature 132 was an average of only 12 cm (4.72 in) in depth. Morphologically, Features 133 and 134 were similar to Feature 132, although their alignment is problematic. They may have been part of an unidentified addition to Structure 2. Unfortunately, erosion of the river bankline was so severe in this part of the site that all stratigraphic evidence to the east had been lost.

The stratigraphic sequence associated with Features 132, 133, and 134 is shown in Figure 116. Stratum I consisted of post-occupational riverine deposits, and Stratum II was the sheet midden deposit that covered much of the occupied portions of Block C. This deposit included a high density of cultural material from the destruction of the outbuildings, and from the late occupation period at the site. Stratum III was the late midden deposit temporally associated with the second half of the nineteenth century; artifact density was moderate, with ceramics, nails, a tobacco pipe, and burned bone present in the deposit. Stratum IV was that the alluvial deposit representing the flood event of 1851; no artifacts were recovered from this deposit. Feature 132 was visible at the interface between Strata III and IV as a dark stain, with a mottling of alluvial silt. The elevation at this interface ranged between 10.95 m NGVD and 11.0 m NGVD. Stratum V was the early midden deposit, predating the flood event. Artifact density was moderate; nails, glass, ceramics, a large quantity of bone (n=50), and a glass bead were recovered. Stratum VI was sterile soil, and represented the base of the occupational sequence

Feature 157, a sill feature defining the presumed northern wall of Structure 2, was extremely indistinct, and in many places it was apparent only in the profile of the excavation unit. Figure 117 shows the placement of Feature 157 within the stratigraphic sequence, and the conjectural plan of this feature based on this data. This position was in alignment with the more visible portions of the feature further to the east (Figure 114). It also was consistent with the elevations of sill features in both Structure 1 and Structure 2 (10.95 m NGVD).

Feature 228 defined the southern boundary of Structure 2 (Figure 118). The area surrounding this sill feature sustained substantial disturbance when the sill was removed, although the depression from the beam could be discerned. Feature 228 ran from west to east, connecting with Feature 132 at the presumed southeastern corner of Structure 2 (Figure 114).. The sill depression ranged in elevation from 10.75 to 10.95 m NGVD. The associated stratigraphic sequence included a high density midden (Stratum II), overlying a stratum consisting of alluvium from the mid-century flood that had been churned and mixed with midden debris (Stratum III and IIIa). The sill depression was filled with a mixture of soils from both the flood layer and the preflood midden (Stratum IV). Stratum V was the transitional soil between the early midden and the sterile subsoil. The configuration and the fill of Feature 228, in contrast to Features 132 -134, indicated that the sill beam from Feature 228 had been removed, while the Feature 132-134 beams remained in place after destruction.

Intersecting with Feature 228 was the *piquette en terre* partition wall (Features 168, and 173 - 190) (Figure 118). This very shallow, narrow trench was approximately 14.8 cm (5.8 in) in width, and 12 cm (4.7 in) in depth. The stake holes within the trench were of varying sizes, but averaged 9 cm (3.5 in) in diameter. The surface of the feature was exposed at an elevation of 11.02 m NGVD within Stratum III, the layer most closely attributable to the mid-century flood. There was some mixing of midden soil with this stratum. The trench and post feature continued into Stratum IV, a more compact midden deposit

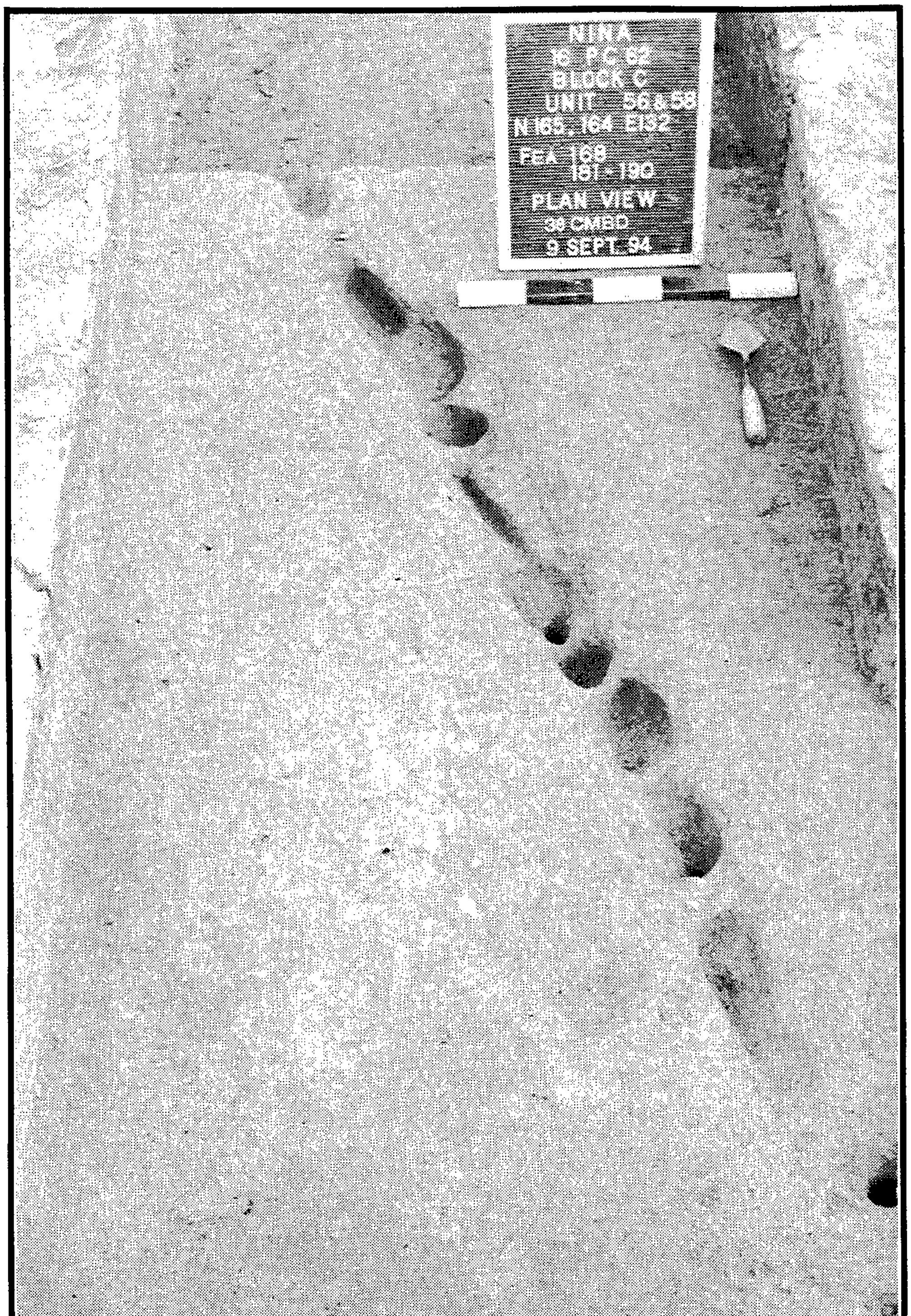


Figure 115. Stakeholes from the *piquettes en terre* partition wall in Structure 2 of the Outbuilding complex. Block C, Units C/56 and C/58, Features 168, 181 - 190.

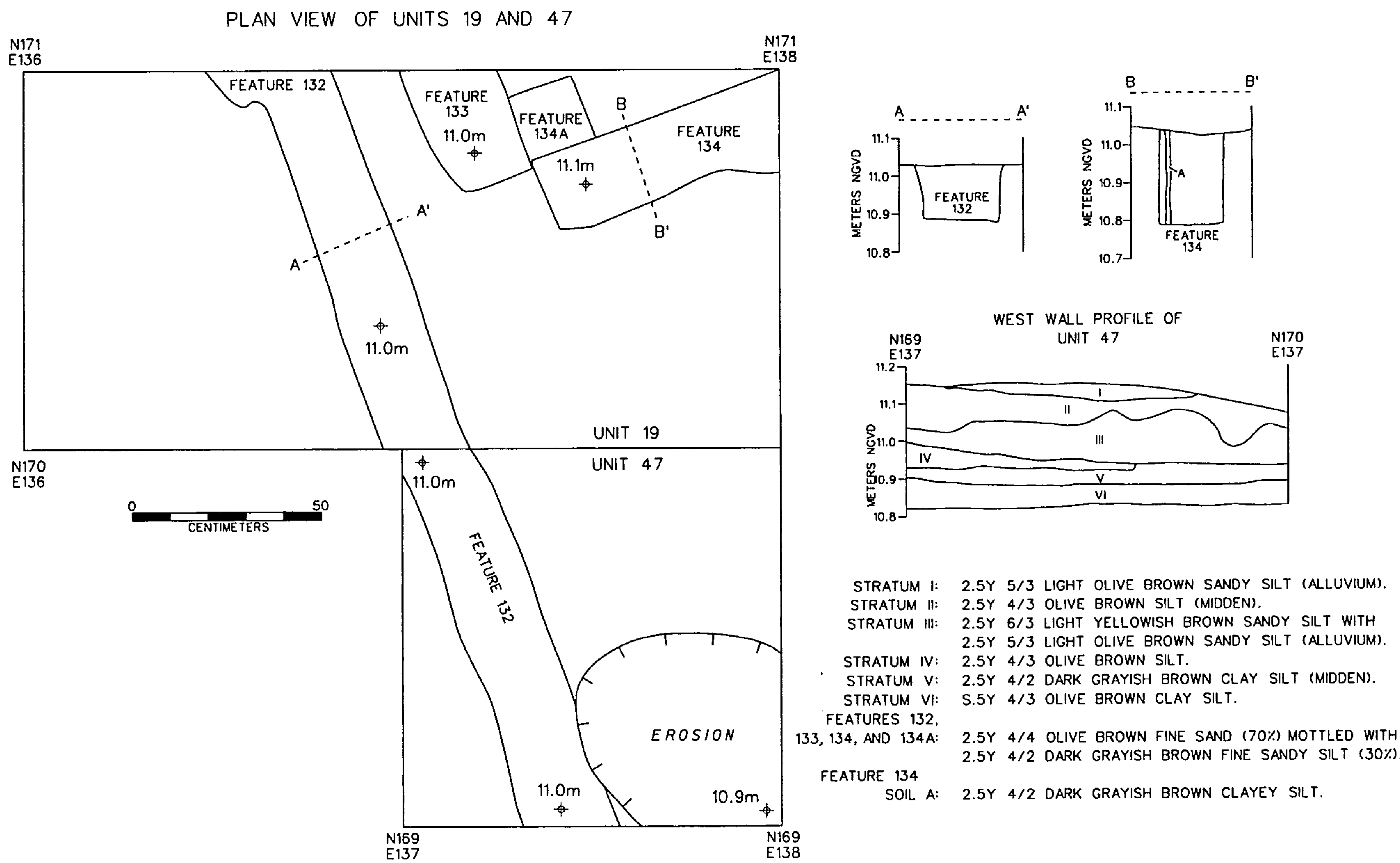


Figure 116. Plan view and profiles of sill features (Features 132 - 134) and corner construction at the northeastern corner of Structure 2. Block C, Unit C/47.

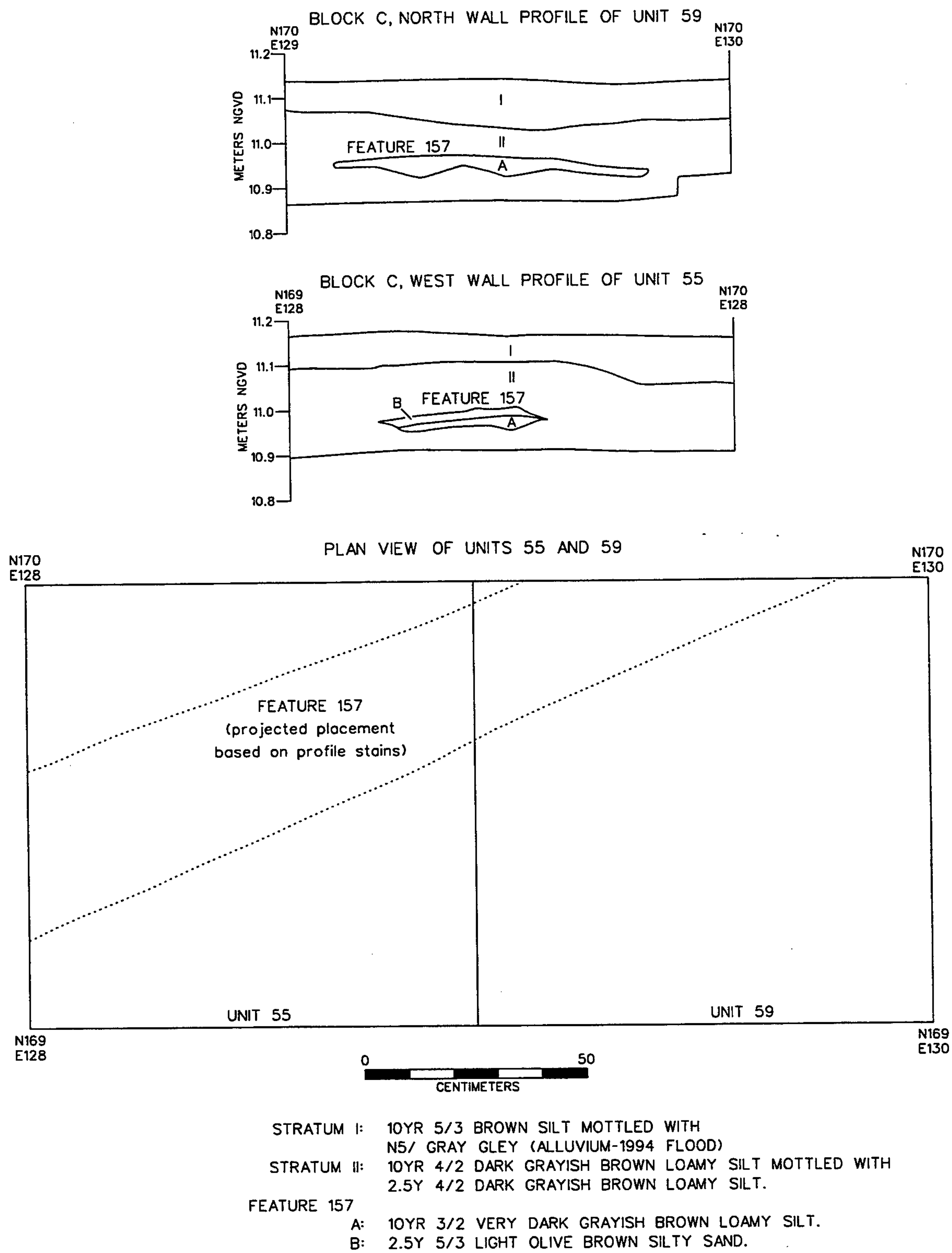


Figure 117. Plan and profile of Units C/55 and C/59, showing the conjectural placement of sill Feature 157, in Structure 2, based on its position in profile.

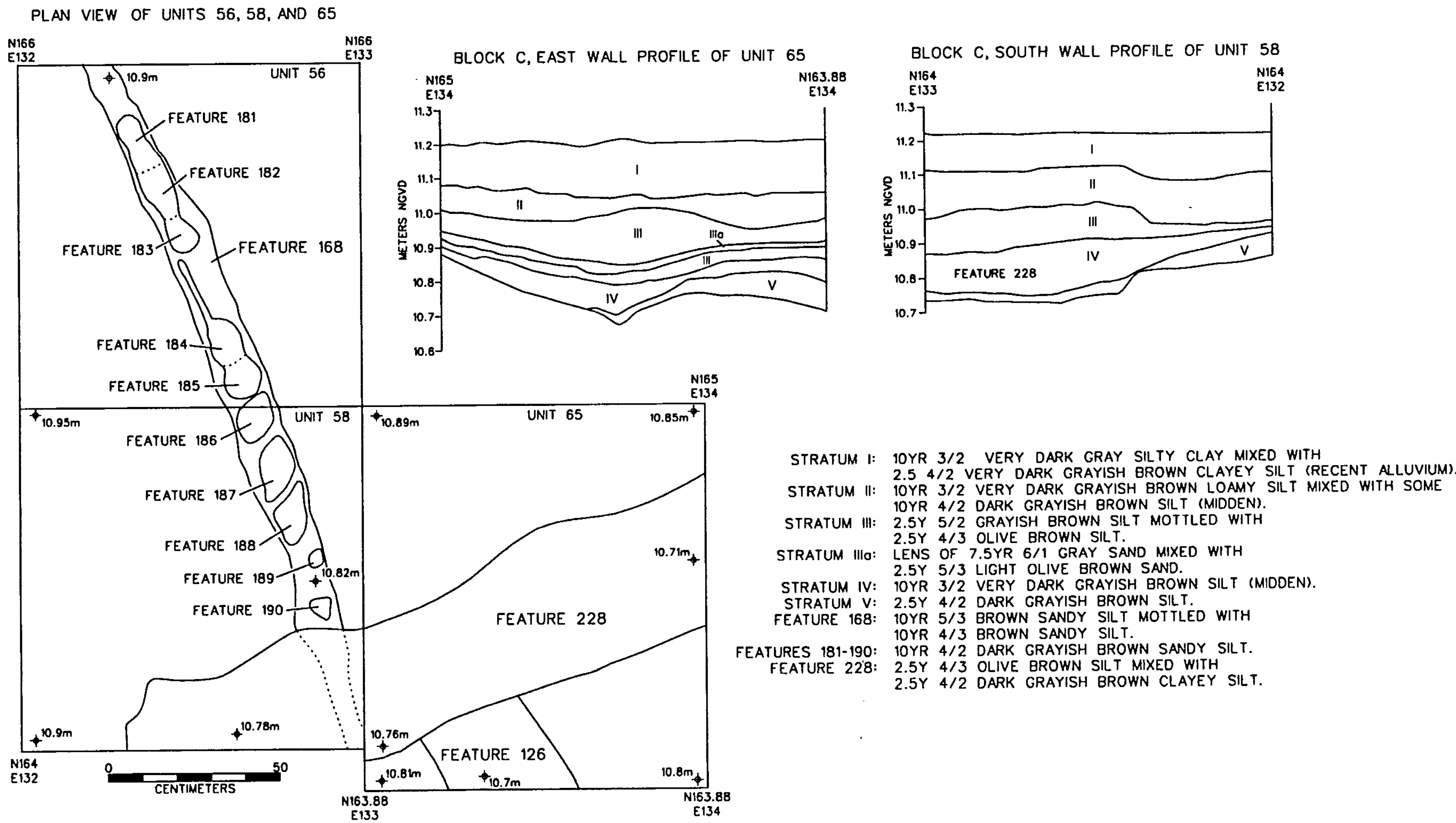


Figure 118. Plan of the south wall (Feature 228), and the *piquette en terre* partition wall (Features 168, 181 - 190) of Structure 2 in the Outbuilding complex. Block C, Units C/58 and C/65.

that predated the flood event, and which probably represented the original occupation surface of Structure 2. Stratum IV was quite thin, averaging only 2 - 3 cm (0.78 - 1.18 in) in thickness. The typical elevation at the base of this stratum was 10.95 m NGVD. Stratum V was a sterile pre-occupation soil.

Firepit Features

No evidence of a formal chimney and hearth was recovered during excavations in Structure 2. Feature 152 (Figures 114 and 119) was a small, relatively shallow, circular pit that measured approximately 41 cm (16.1 in) in diameter; it was 10 cm (3.9 in) in depth. The feature contained charcoal, pockets of ash, 14 burnt bone fragments, 14 nails, and one brick fragment. The charcoal was concentrated at the bottom of the pit, and several pockets of burnt, reddened clay were noted in the walls of the feature. The soils surrounding Feature 152 had a high ash and charcoal content. All of these data supported the supposition that the small pit feature was used as a firepit; the presence of burnt bone suggested its use for cooking.

The stratigraphic sequence in the area of Feature 152 (Figure 119) included Stratum I, an alluvial deposit from the 1993 - 1994 flood. The appearance of Feature 152 coincided with the interface of Strata I and II, at an elevation of approximately 11.02 m NGVD. Stratum II was a compact, dark midden soil with a moderate concentration of ceramics, bone, charcoal, and nails. This midden deposit was approximately 20 cm (7.87 in) in thickness, with a base elevation of approximately 10.95 m NGVD. Stratum II included both early and late midden materials. As in Structure 1, the flood of 1851 had not penetrated to the central areas of Structure 2, and there was no clear division between middens. Stratum III was sterile.

Feature 166 was a small feature with a roughly oval shape that was apparent at the base of the sterile Stratum III in Unit C/52, at an elevation of 10.83 m NGVD. It contained bone fragments, 1 nail, small brick fragments, and charcoal (Figure 119). The configuration of this feature, as well as its elevation in relation to other cultural features in the vicinity, suggest that it may have been formed by burrowing activity, rather than by cultural intent.

<u>Summary of Structure 2</u>

Structure 2 was delimited by the presence of three sill features, and a central partition wall. The partition wall was constructed using *piquette en terre* technology; this building technique and the lack of evidence of a wood floor or a formal chimney or hearth suggest that the living conditions in this structure were relatively primitive. The size and configuration of Structure 2 was impossible to determine with precision, but evidence suggested a building with dimensions of approximately 6.4 m (21.09 ft) x 11.42 m (37.48 ft). The original occupation surface in Structure 2 was at 10.95 m NGVD, corresponding to the original interior and exterior occupation surfaces at Structure 1. The 1851 flood deposit was not evident in most interior portions of Structure 2, but was clear on the exterior, indicating the presence of the building in mid-century.

<u>Exterior Features</u>

Feature 126

During excavation in the Outbuilding complex, various non-structural features were investigated. One of the most significant was Feature 126, a trench feature located south of Structure 2 (Figures 114 and 120), and perpendicular to Feature 228, the south sill. The base of Feature 126 sloped gradually to the south, away from Structure 2. While the reasons for the placement of this apparent drainage ditch remained unclear, the feature's excavation provided an excellent illustration of the general stratigraphic sequence in Block C.

Stratum I was the late midden deposit, composed of a very dark grayish brown silt with a high density of cultural materials. These included ceramics, glass, buttons, marbles, nails, bone, and shell. Stratum II was a 10 to 15 cm (3.9 to 5.9 in) thick alluvial deposit, attributed to the flood of 1851. The base elevation of Stratum II was 11.05 m NGVD, consistent with the flood deposit elsewhere on the site. The interface between Strata I and II was extremely uneven, indicating disturbance to Stratum II soils after deposition. The Stratum II flood layer had an extremely light density of cultural materials; these included seven nails, four bone fragments, one ceramic sherd, and three glass fragments.

Directly beneath the flood layer was the early midden deposit, identified as Strata III, and

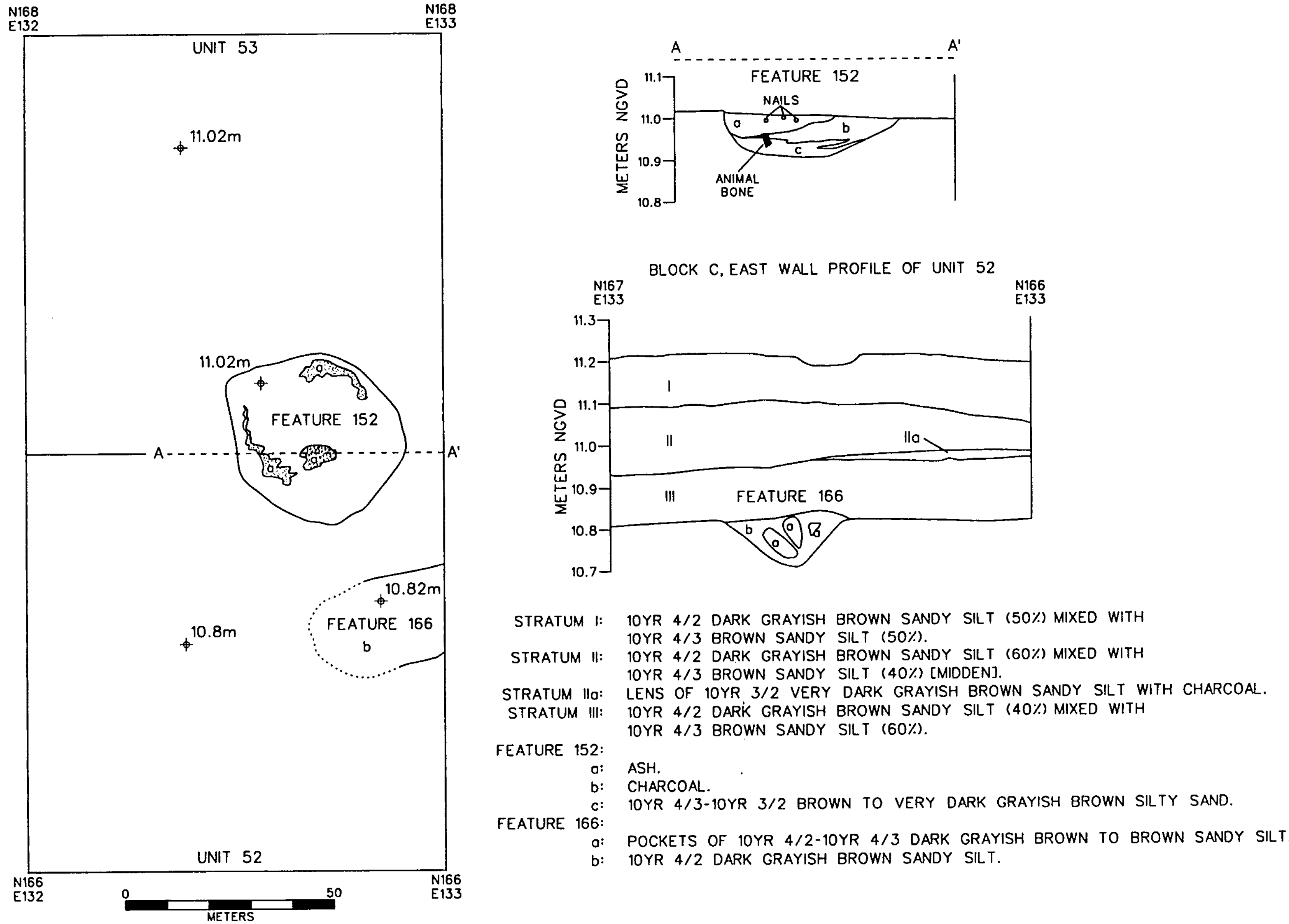
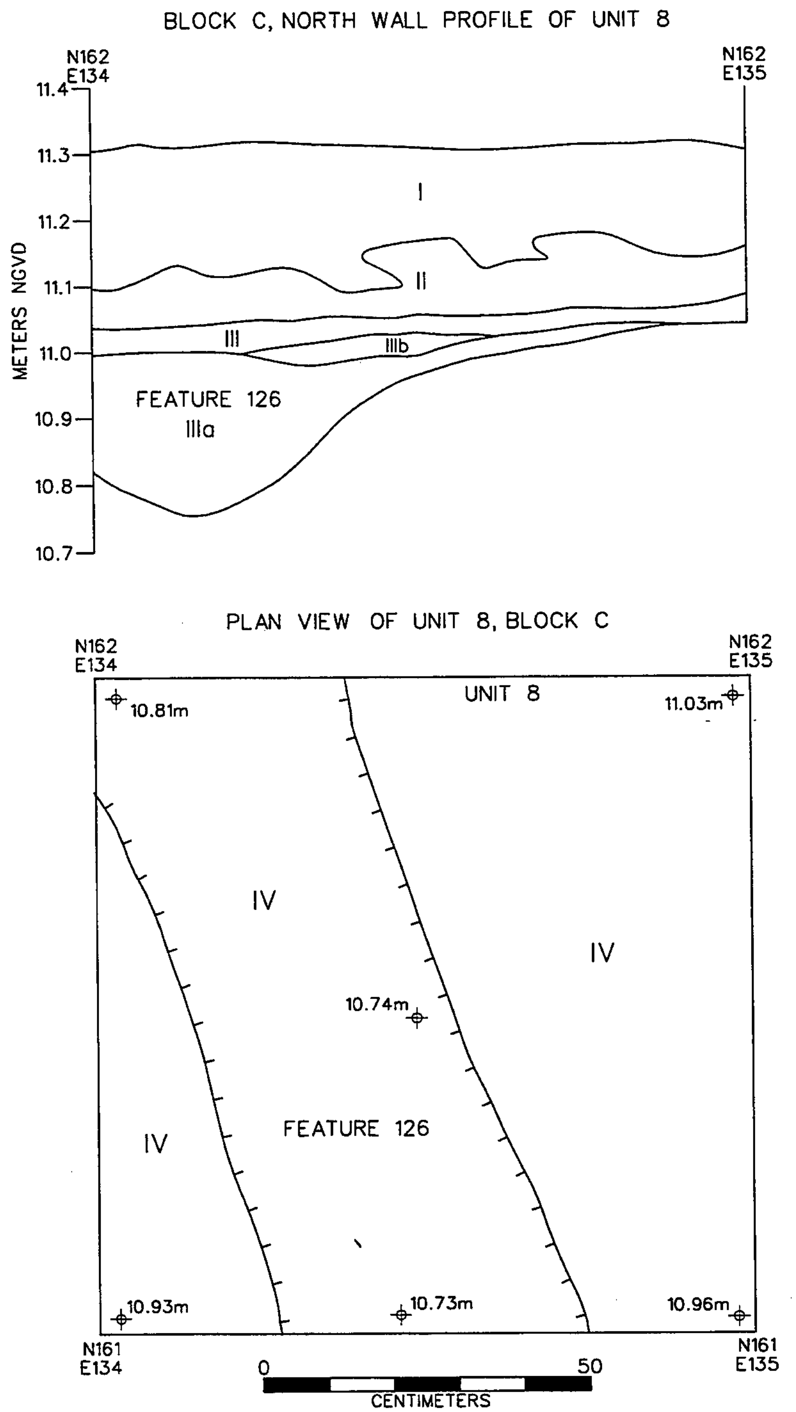


Figure 119. Plan and profile views of Features 152 and 166 in Structure 2. Block C, Units E/52 and E/53.



STRATUM I: 10YR 3/2 VERY DARK GRAYISH BROWN CLAYEY SILT.
STRATUM II: 2.5Y 5/3 LIGHT OLIVE BROWN SANDY SILT.
STRATUM III: 10YR 4/2 DARK GRAYISH BROWN CLAYEY SILT.
STRATUM IIIa: 10YR 4/3 BROWN CLAYEY SILT (SOFT MIDDEN).
STRATUM IIIb: 10YR 4/2 DARK GRAYISH BROWN CLAYEY SILT AND
10YR 4/3 BROWN CLAYEY SILT MOTTLED WITH
10YR 5/6 YELLOWISH BROWN CLAYEY SILT AND
10YR 3/2 VERY DARK GRAYISH BROWN CLAYEY SILT (POSSIBLE BURNED SURFACE).
STRATUM IV: 10YR 4/3 COMPACT BROWN CLAYEY SILT.

Figure 120. Plan and profile views of Feature 126, in Block C, Unit C/8.

IIIb. The trench was apparent at 11 m NGVD; it was filled with early debris. This trench fill was designated Stratum IIIa. Stratum III contained a high density of artifacts, including ceramics, glass, large quantities of bone (n=165), fish scale, nails, small brick fragments, and charcoal. Stratum IIIb covered the central and western portions of the unit, at an elevation of 11.0 m NGVD, directly on top of the fill of Feature 126. Stratum IIIb consisted of a level area of fire-reddened soil with ash and charcoal. Stratum IIIa, the fill of Feature 126, was indistinguishable from Stratum III soils, but was excavated separately. It contained a high density of cultural materials of the same nature as those recovered from Stratum III.

Features 232 - 236

Unit C/63 was excavated midway between Structures 1 and 2; its excavation was intended to aid in characterization of the soils between the two structures, and possibly to identify any activity loci in what may have been a centralized yard area (Figures 70, 121, and 122). The stratigraphy in Unit C/63 corresponded to the general pattern observed elsewhere on the site. Two profiles are shown in Figure 121. In these, Stratum I was the 1993-1994 flood deposit, showing some disturbance in the west wall. Stratum II was the late midden deposit, with a high density of cultural materials including nails, bone, glass, ceramics, buttons, and miscellaneous domestic items. Stratum III was the alluvium deposited during the 1851 flood; it displayed the same uneven interface with Stratum II as was seen in Unit C/8 (Feature 126). Strata IV and V were both early midden deposits, although there was a slight variation in soil color. The density in this deposit was low to moderate, with bone, ceramics, glass, nails, and a stoneware pipe bowl recovered. Below Stratum V, at an elevation of 10.9 to 10.95 m NGVD, was a hard-packed surface containing ash and charcoal This lens, labeled Feature 239, was discontinuous, although it covered approximately two thirds of the unit. The elevation and morphology of Feature 239 was consistent with the original occupation surface in the Outbuilding complex.

Four posthole or pit features and a linear feature (Features 232 - 236) were investigated in Unit C/63 (Figure 122). All of these were visible at the interface between Strata II and III, associating them with the later, post-1851 occupation period. All were filled with an olive brown silt soil similar to that of Stratum III, suggesting that they were filled at the time of the flood, or shortly after. Only Feature 233 contained artifacts; these consisted of a light density of ceramics, nails, bone, glass, and a button. The purpose of these postholes and other features was not readily apparent, but it was assumed that they were related to activities in the yard between the outbuildings.

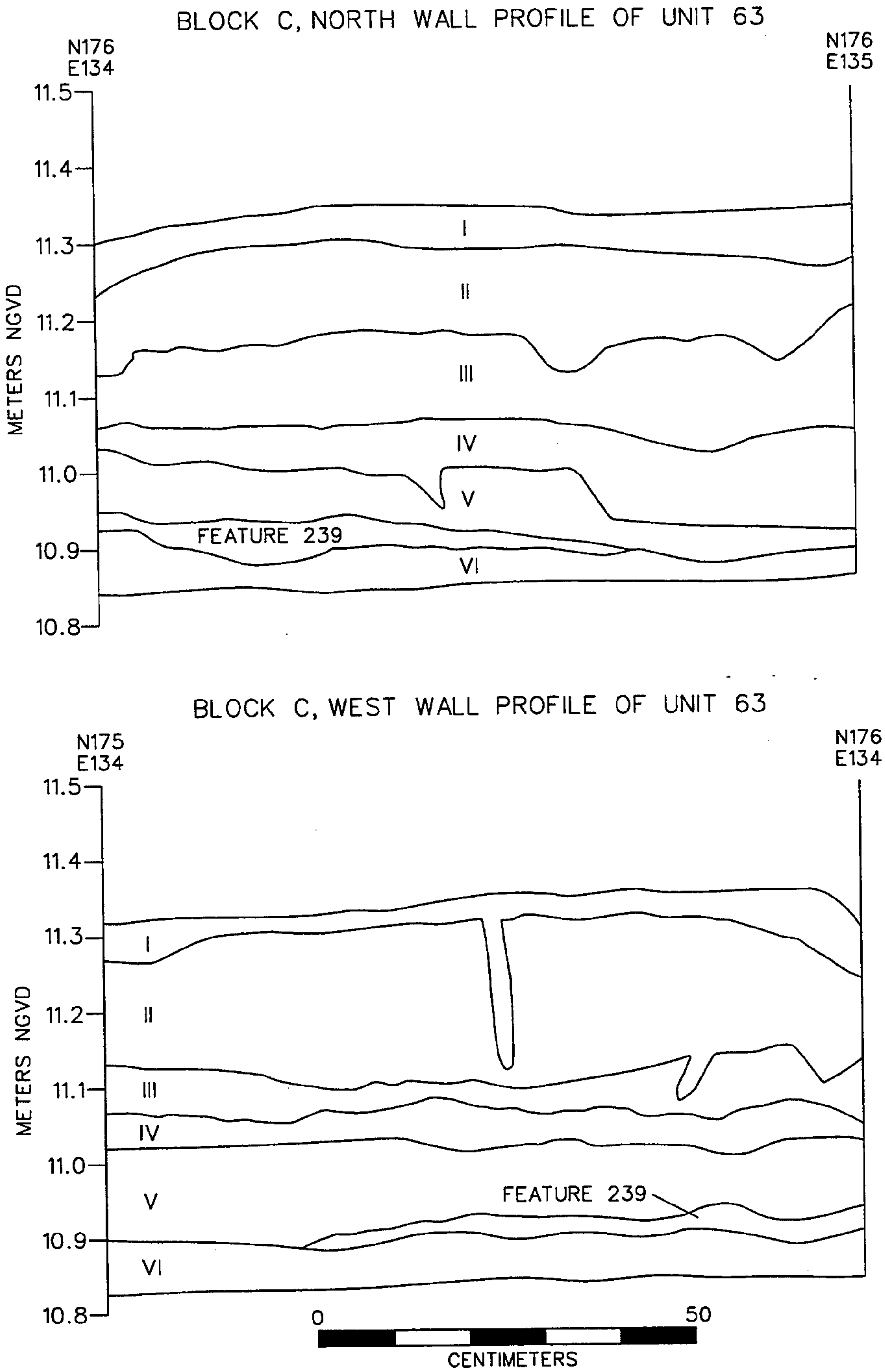
Features 1 - 6

Cartographic evidence indicated that the Outbuilding complex formerly comprised four structures, two of which had been lost to erosion of the Mississippi River bankline. During bankline survey of Block C, a complex of six features was identified; these may have been either the remains of a third structure in the Outbuilding Complex, or the remains of a drainage system. Units C/1, C/2, and C/3 (Figures 66, 70, and 123) were established to investigate these features. Unfortunately, erosion was active in the area, and significant slumping of the deposits already had taken place. Features 1 and 3 (Figure 123) were composed of brick in course, although their original configuration could not be determined. These features flanked Feature 2, a wide, shallow ditch that measured approximately 0.8 m (2.62 ft) in width and 22 cm (8.66 in) in depth (Figure 124). The fill in Feature 2 was a gray midden soil that appeared to correspond to the early midden in the rest of the Outbuilding complex. Because of slumping in these units, the surrounding stratigraphy and elevations could not be used to correlate this deposit. Cultural materials recovered from the midden deposit included ceramics, nails, glass, buttons, bone, eggshell, and brick and mortar fragments. Features 4 and 5 (Figure 123) were investigated and determined to be natural erosional channels.

Feature 6 was a small posthole, measuring approximately 25 cm (9.8 in) in diameter (Figures 123 and 124). Bisection of the feature revealed a core of decayed wood. The fill in the post was similar to the midden deposit located in Feature 2.

<u>Unassociated Features</u>

Four post-occupational features also were identified during excavations in Block C (Figure 70). Features 14, 18, and 19 were relics of a low



STRATUM I: 10YR 4/2 DARK GRAYISH BROWN SANDY SILT.
STRATUM II: 2.5Y 4/3 OLIVE BROWN SANDY SILT (MIDDEN).
STRATUM III: 2.5Y 5/3 LIGHT OLIVE BROWN SILT (ALLUVIUM).
STRATUM IV: 10YR 4/2 DARK GRAYISH BROWN SILT (MIDDEN).
STRATUM V: 10YR 4/3 BROWN SILT.
STRATUM VI: 2.5Y 4/3 OLIVE BROWN SILT.
FEATURE 239: LENS OF 10YR 4/3 BROWN SILT WITH ASH AND CHARCOAL.

Figure 121. Profiles of the north and west walls of Unit C/63, showing Feature 239.

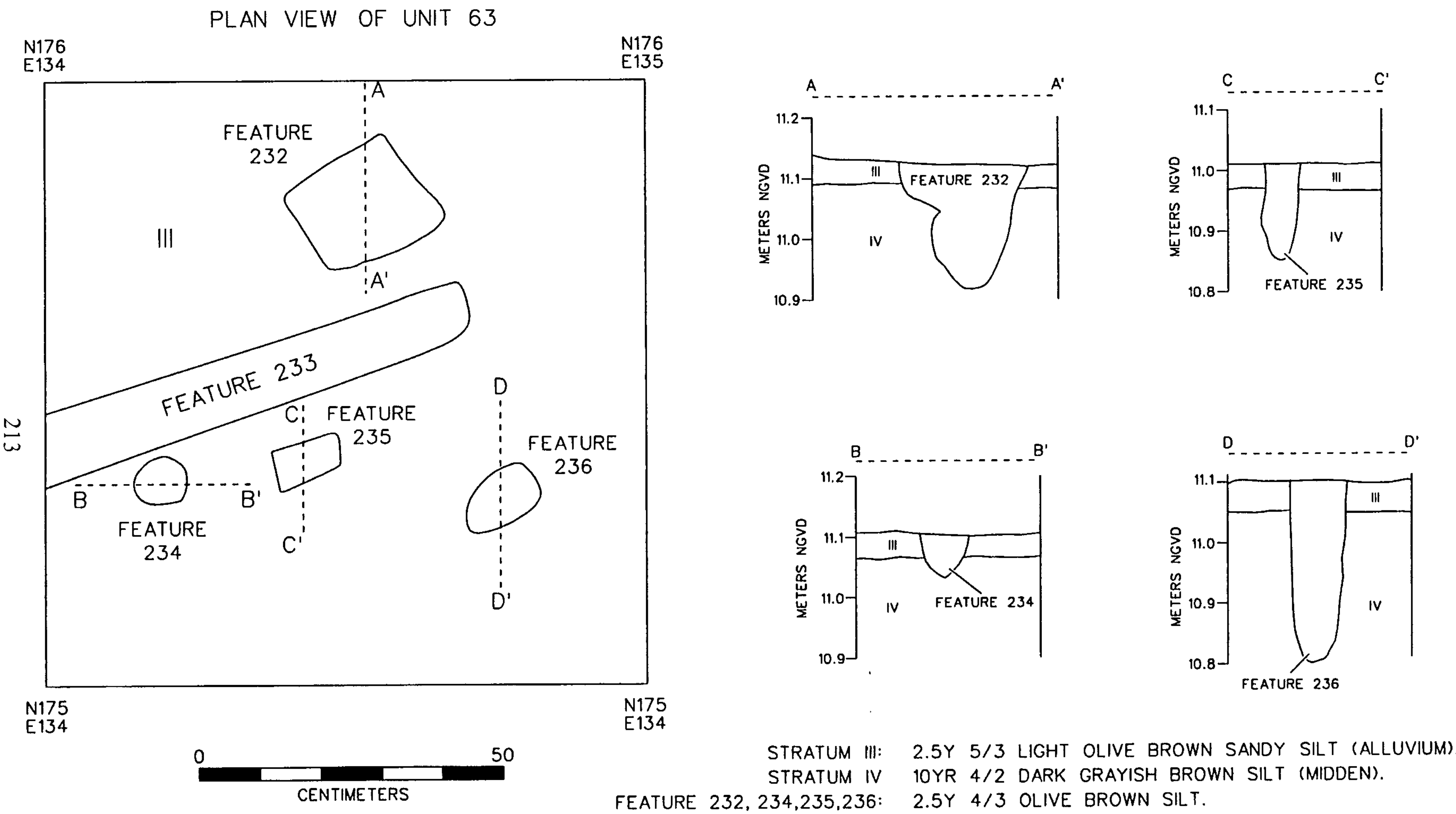


Figure 122. Plan and profile views of Features 232, 233, 234, 235, and 236, in Unit C/63.

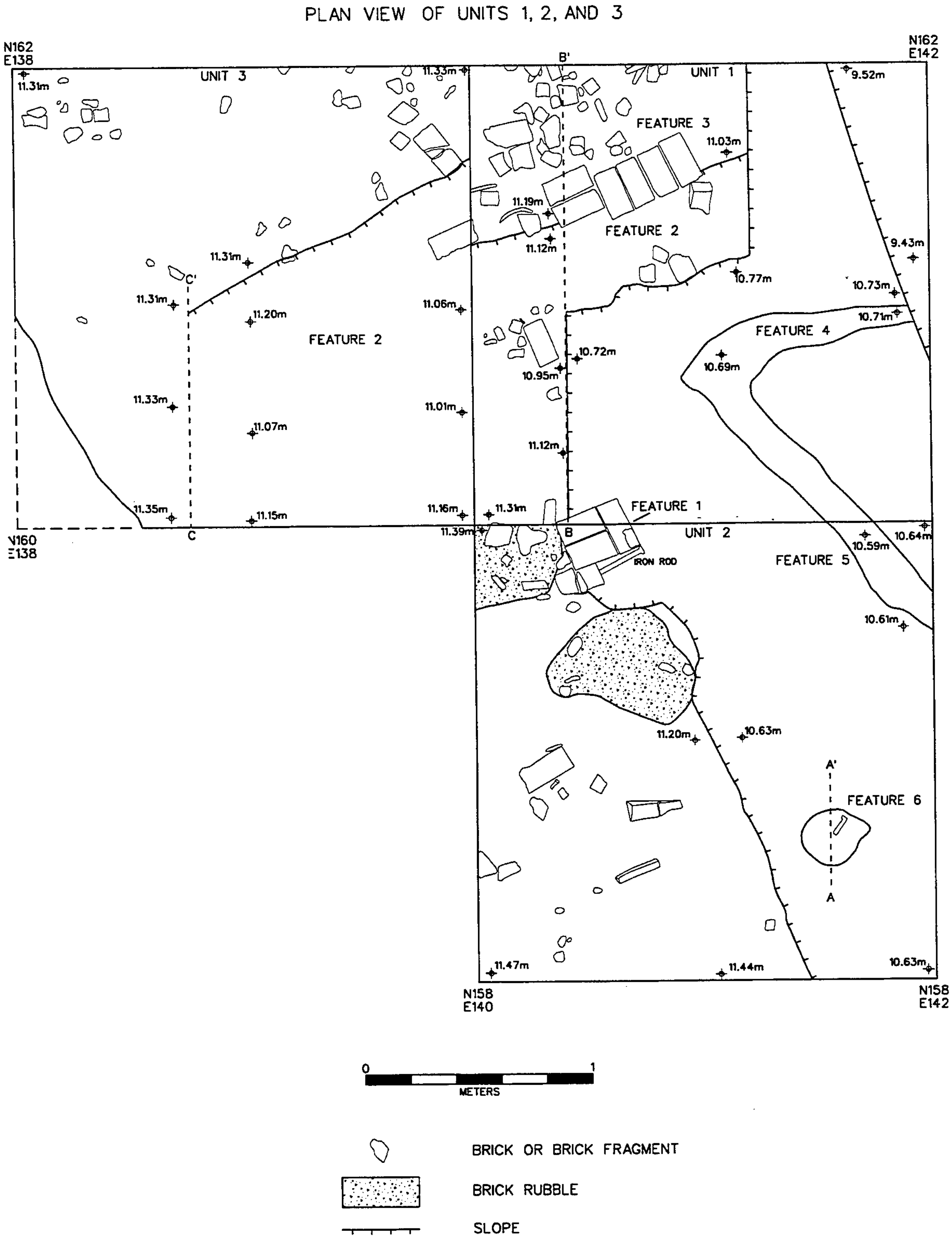


Figure 123. Plan of Features 1 - 6, in Block C, Units C/1 - C/3.

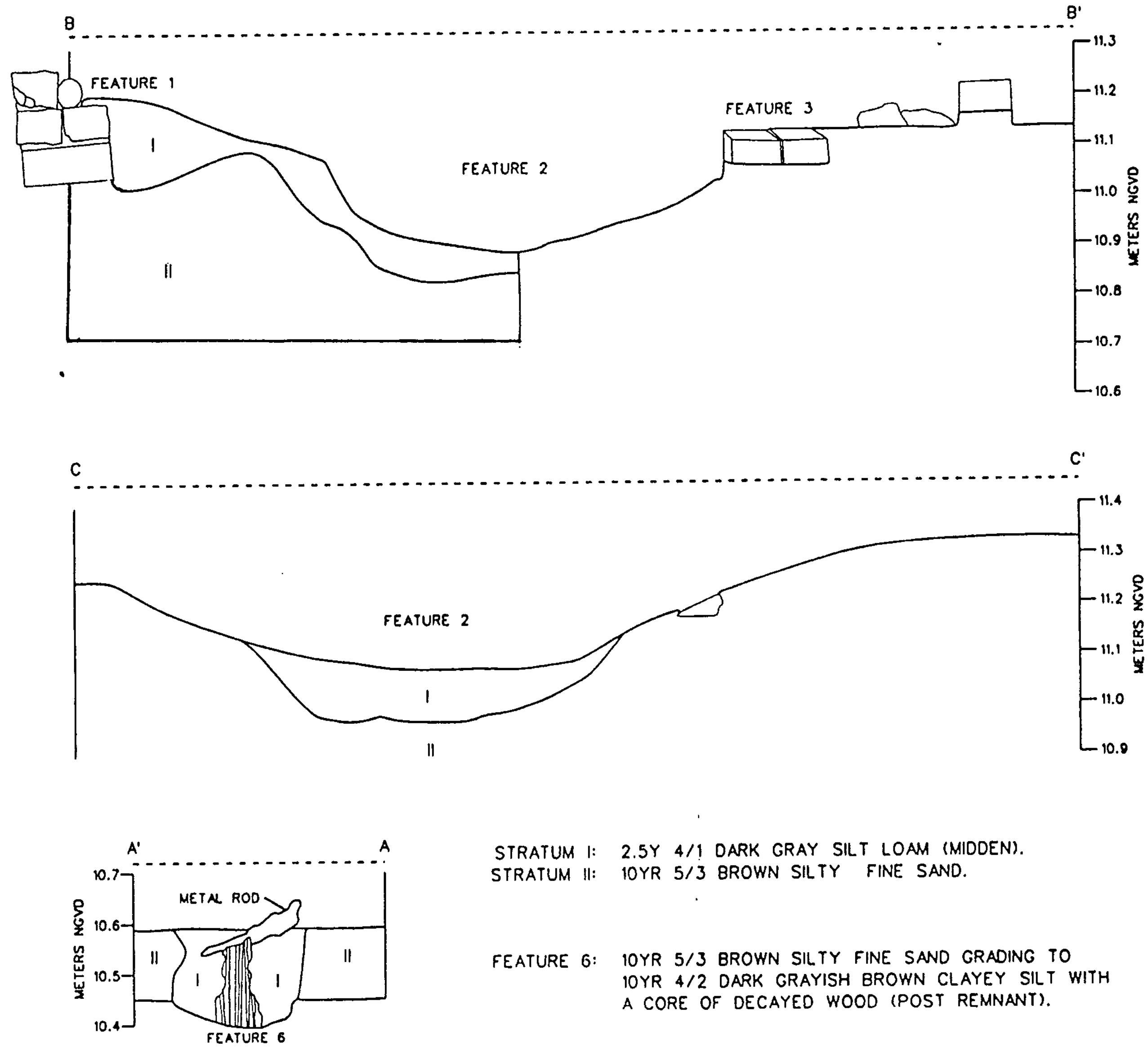


Figure 124. Profiles of Features 2 and 6, in Block C, Units C/1 - C/3.

levee and two associated parallel ditches that ran from east to west through the western half of Block C. Feature 14 was composed of late midden soils from the occupied areas of Block C. It ranged in elevation from 11.58 m NGVD at the highest point, to 11.16 m NGVD at its base, in the Feature 19 ditch. The levee continued into Block D; it was positioned on top of the post-destruction pier features of the south wing.

Two features identified in Unit C/18, just west of the levee feature, also post-dated the occupation of the site. Artifacts recovered from this unit were attributed to the disturbed late midden that had been used in levee construction. Elevations of these features ranged from 11.58 m NGVD to 11.46 m NGVD.

Summary of the Outbuilding Complex

The Outbuilding Complex at Site 16PC62 comprised two structures and associated exterior features. The remains of an unidentified structure were located on the eroding bankline to the southeast of Structure 2. Structures 1 and 2 exhibited similar earthfast construction methods, although Structure 1 was better preserved. Structure 1 was renovated during the second half of the nineteenth century, when a substantial brick chimney and a wooden floor were added. No such renovation of Structure 2 seemed to have taken place. Some evidence of a central yard between the two structures was identified, although only a single unit was excavated in this area.

The stratigraphy of the Outbuilding area consistently revealed two occupational deposits, separated by the flood deposit of 1851. The elevational data supports this conclusion. The original occupation surface of the Outbuilding complex was consistent at approximately 10.95 m NGVD, and all original construction took place at that level. This elevation corresponds roughly to that of the original occupation surfaces in the Main House complex, and may indicate that the core, south wing, and the outbuildings were constructed contemporaneously.

Block F

During excavation of Trenches 10 and 11, at the northern and western edges of Block F, one feature was identified (Feature 52), and a moderate density of cultural materials was recovered. Based on these factors, the overburden from a 30 x 36 m area of Block F was removed (Figures 114 and 69). Thirteen units with a total area of 24 square meters were excavated. During excavations, five features were investigated, and a small area of cultural midden was exposed. No structural remains were identified during excavations.

Features 43 and 143

Feature 143 (Figure 125) was an amorphous shallow depression, with gently sloping sides and an uneven base; its maximum depth was approximately 12 cm (4.7 in). Secondarily used for refuse disposal, the feature appeared to have had a natural origin. Artifactual debris was light in density, with seven bone fragments and one ceramic sherd recovered.

Adjacent to Feature 143 was Feature 43, also determined to have been a natural concavity, possibly a tree fall or an erosional gully, that subsequently was used for refuse disposal. Feature 43 had been impacted previously by severe erosion of the Mississippi River bankline, and extremely high water levels at the time of excavation threatened total loss of the remaining feature. The feature was amorphous in shape, with a diameter of approximately 2.23 m (7.31 ft). Feature 43 sloped gradually towards the bankline; its maximum depth was approximately 0.91 m (2.9 ft).

Cultural remains in Feature 43 were of extremely high density, and included ceramics, glass, tobacco pipes, nails, bone, and shell. The stratigraphy indicated that the feature had filled relatively rapidly. The temporally diagnostic materials from the feature dated from the first third of the nineteenth century, indicating an early episode of trash disposal.

The stratigraphic sequence observed during excavation of Feature 43 corroborated its early date (Figure 125). Strata IA and IB were late midden deposits that included small amounts of brick and mortar debris from the destruction of the site. Stratum II reflected the flood of 1851; this layer of alluvium was encountered across the entire site at a consistent depth range between 11.0 and 11.2 m NGVD. In Units F/1 and F/2, this flood deposit was recorded at an elevation of approximately 11.04 m NGVD. Below the flood stratum were early midden deposits, with a moderate density of cultural materials. The base of this midden deposit was at approximately 10.9 m NGVD, an elevation that corresponded to the

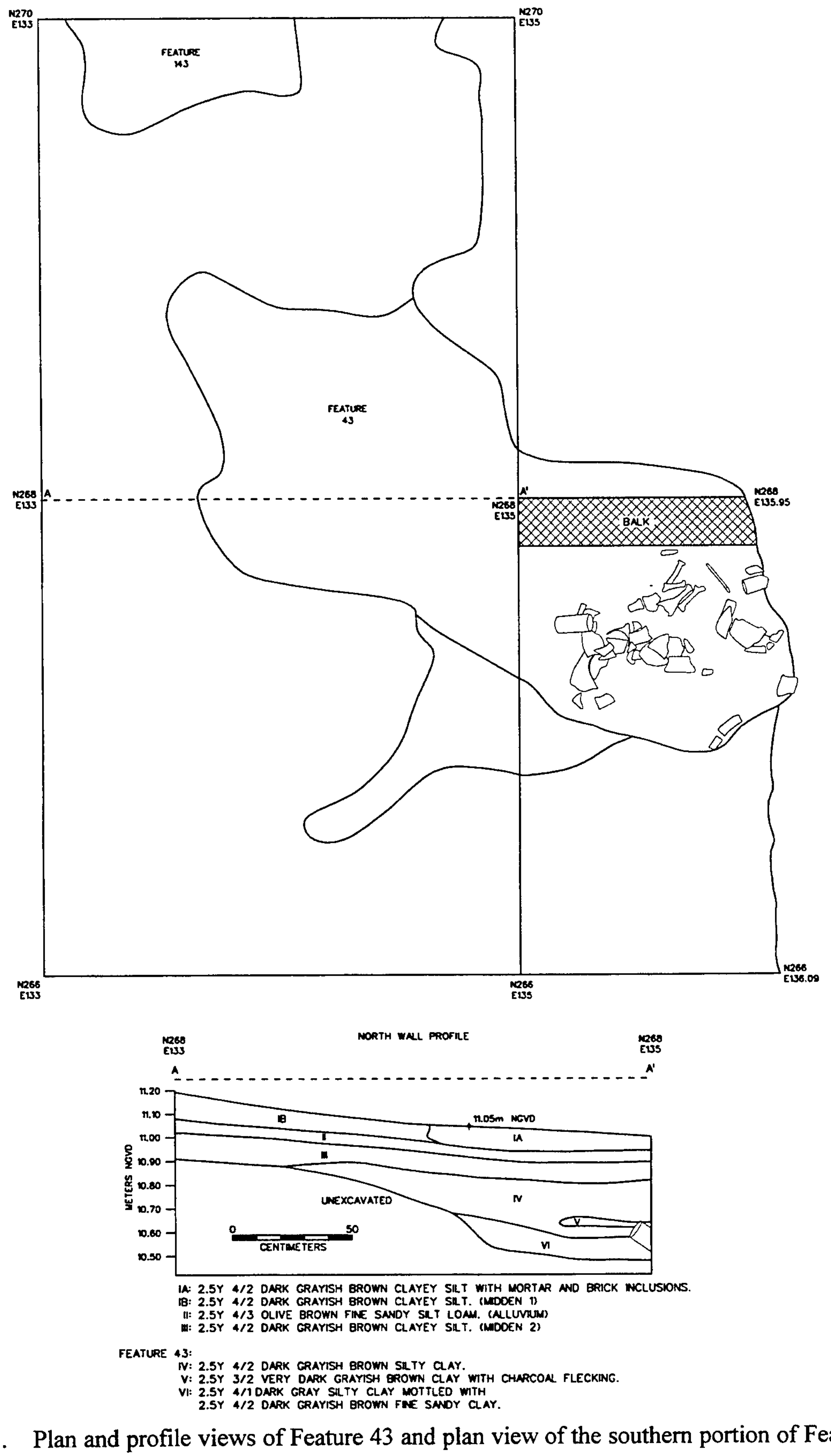


Figure 125. Plan and profile views of Feature 43 and plan view of the southern portion of Feature 143, in Block F.

original occupation surface across the site. Feature 43 soils included Strata IV through XVI, although only Strata IV, V, and VI were visible in the profile of Unit F/1. The position of Feature 43, in the lower levels of Stratum III, and at an elevation of approximately 10,95 m NGVD, point to an early date for the deposition of cultural materials.

Feature 130

Feature 130 was a shallow, refuse-filled depression that originated at the base of the early midden deposit in Unit F/5 (Figures 69 and 126). The stratigraphic sequence in this unit was similar to that seen in the area of Features 143 and 43. The first stratum was composed of a dense concentration of brick rubble and late midden; the apparent destruction rubble was concentrated in the eastern portion of the unit. Stratum I also contained a moderate density of oyster and *Rangia* shell, ceramics, glass, and nails. Stratum II was a continuation of the late midden and destruction soils, with a high concentration of oyster and *Rangia* shell, some brick rubble, plaster fragments, nails, ceramics, bone, and miscellaneous unidentified iron fragments.

Stratum IIIa was a lighter colored, hard-packed deposit that contained a moderate density of cultural materials. The mottled nature and the color of this soil were indicative of flood deposition. The elevation of the flood layer (Stratum IIIa) was approximately 11.18 at its base. Stratum IIIb was characterized as the early midden deposit, and contained ceramics, glass, nails, and a bone domino.

Feature 130 was apparent at the base of Stratum III, at an elevation of approximately 11.1 m NGVD. The original fill of Feature 130 (Stratum III-2) was similar to the early midden deposit (Stratum IIIb), but it contained a lighter density of cultural materials. Recovered artifacts included one ceramic sherd, one glass fragment, six shell fragments, and one shell button. The feature had been capped with a sterile clay soil (Stratum IV-1) after initial refuse deposition. The stratigraphic position of Feature 130 suggested that the fill was deposited during the first decades of the nineteenth century, and that it was contemporary with the dumping episode in Feature 43.

Feature 52

Feature 52 was identified during the excavation of Trench 11 on the western edge of Block F (Figures 77 and 127). This feature consisted of a shallow, circular pit (Feature 52A), that had been excavated into a previously filled, square pit (Feature 52B). Both of Features 52A and 52B originated at the top of the late occupation soils, at an elevation of approximately 11.25 m NGVD. Feature 52A contained three strata. The uppermost was a gray silty loam with a very light concentration of ceramics, glass, nails, and brick fragments. The second stratum had a higher clay content, and it was mottled with iron oxide deposits; it did not contain artifacts. Stratum III was a charcoal-rich layer that contained four nails, one ceramic fragment, and a tortoise carapace. The base of Feature 52A was at an elevation of 11.05 m NGVD.

Feature 52B contained a single stratum. Stratum IV was a sterile, silty clay, with some darker mottling. A core taken at the base of Feature 52B produced no evidence of any earlier deposits in this area of the site.

Feature 53

Feature 53 was identified during the grading of Block F; it was located at the northern edge of the stripped area (Figures 77 and 128). Originating in alluvium at an elevation of 10.39 m NGVD, this feature appeared to postdate occupation of the site. The fill was a series of sandy lenses, clay, and organic materials with disturbance from tree roots. Artifact density was extremely low. The edges of the feature were sharp, and no root or burrow disturbance appeared in the sidewalls; this precluded the conclusion that Feature 53 was the result of a treefall or other natural occurrence.

Stratum I within this feature was composed of the remnants of the post-occupation alluvium. Stratum II was a dark grayish brown clayey silt with root disturbance and organic material; no artifacts were recovered. Stratum III consisted of a mottled sandy soil; one ceramic fragment was recovered. Stratum IV was similar to Stratum III but more firmly packed. A core taken at the base of Stratum III indicated no earlier cultural deposits in this area of Block F.

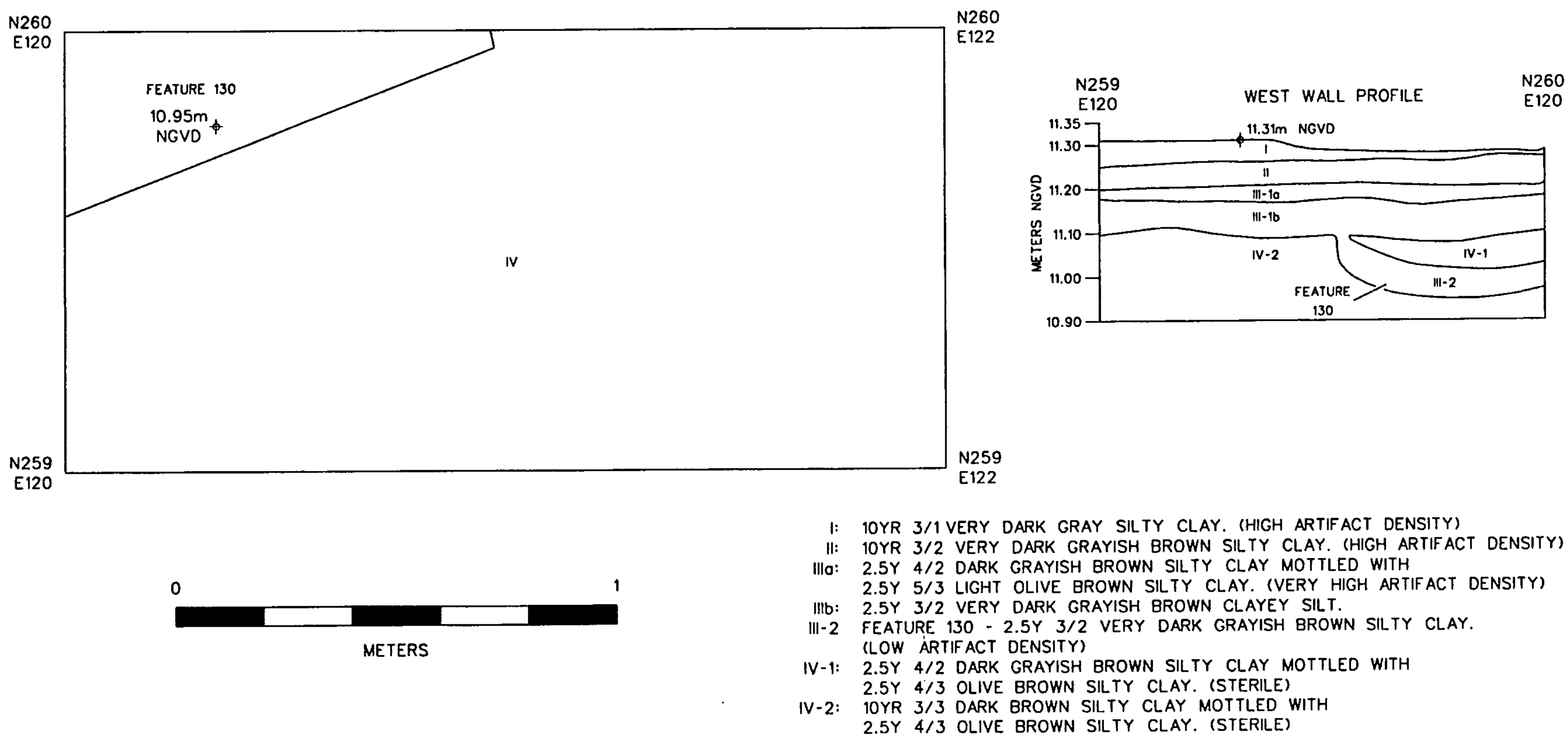
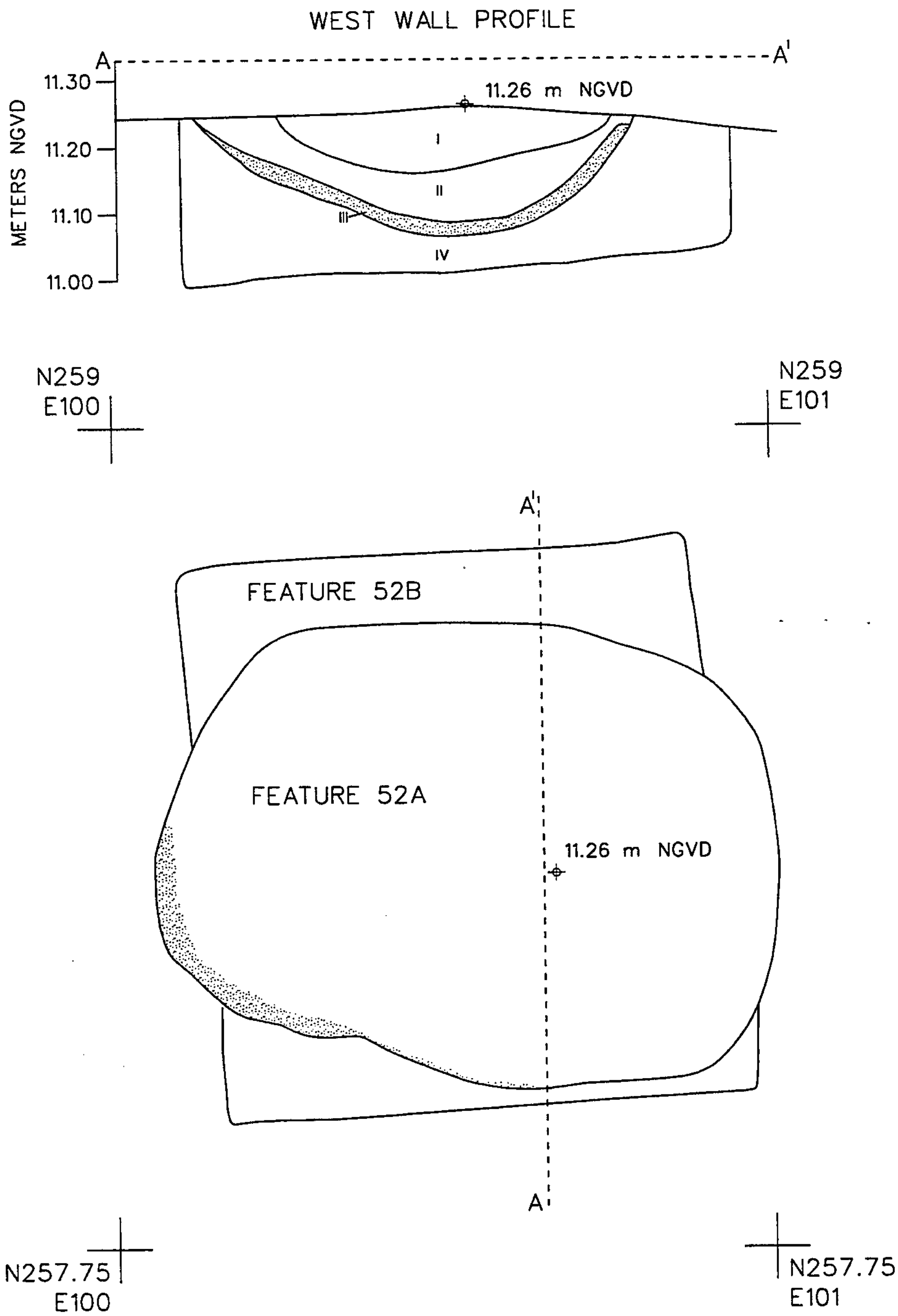


Figure 126. Plan and profile views of Feature 130, Unit F/5, in Block F.



FEATURE 52A

I: 10YR 5/1 GRAY SILTY LOAM. (LOW ARTIFACT DENSITY)

II: 10YR 5/6 YELLOWISH BROWN SILTY CLAY MOTTLED WITH IRON OXIDE AND SOME BRICK FLECKING.

III: 10YR 3/1 VERY DARK GRAY, CHARCOAL RICH, SILTY LOAM. (MODERATE ARTIFACT DENSITY)

FEATURE 52B

IV: 10YR 5/6 YELLOWISH BROWN SILTY CLAY. (STERILE)

Figure 127. Plan and profile views of Features 52 A and 52 B, in Block F.

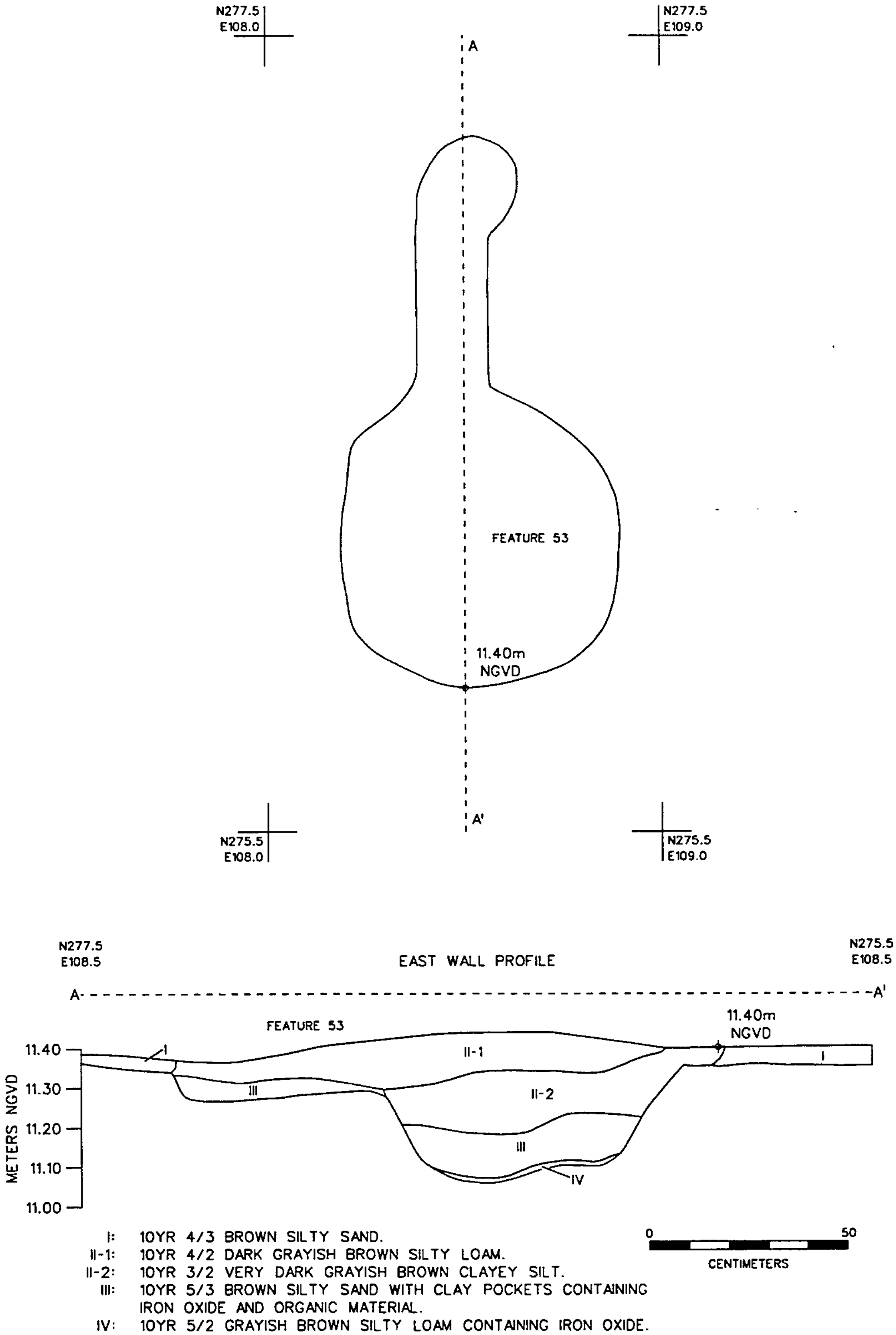


Figure 128. Plan and profile views of Feature 53, in Block F.

Summary of Block F

Features 43, 143, and 130 all represented episodes of secondary refuse deposition during the first decades of occupation at Nina Plantation. Feature 52 appeared to date to the latest occupation period at the site; its original purpose is unknown. Feature 53 was a post-occupation feature of an unidentified nature. No structural features were identified in Block F, and no extensive areas of midden were located. In general, Block F appeared to have been used only for secondary refuse disposal during the earliest occupation periods at the site.

Trenches

In addition to block and feature excavations, seventeen archeological trenches were excavated during Phase III investigations at Nina Plantation (Figure 64). These trenches were intended to permit characterization of cultural deposits in various areas of the site, and to investigate variations in the stratigraphic sequence at Nina Plantation. Representative trench profiles are described below. Data pertinent to the trench excavations can be found in Appendix 1 of this report.

Trench 1

Trench 1, in Block C, was excavated on an east-west line running perpendicular to the river (Figures 64 and 129). Because the post-occupational overburden had been removed prior to excavation of Trench 1, the stratigraphic sequence started at approximately 11.25 m NGVD. The elevation at the base of the trench was 9.4 m NGVD.

Three cultural strata were visible in the profile of Trench 1. Stratum II was attributed to the late occupation sequence and to the final destruction of the site. Artifact density, as in the rest of Block C, was high, and included ceramics, glass, nails, brick, and mortar fragments. Stratum III was composed of the sandy alluvial deposit from the flood of 1851. Stratum IV was the early midden deposit. The base of Stratum IV ranged in elevation from 10.85 to 10.95 m NGVD.

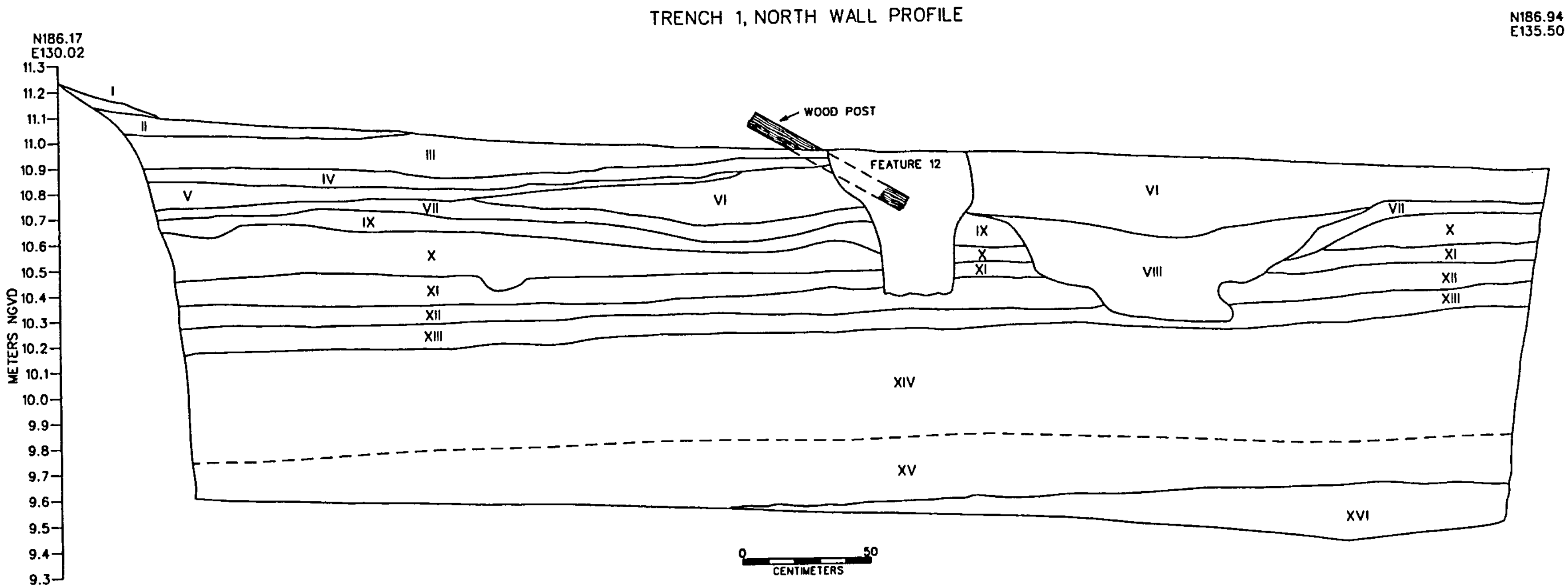
Post-occupational disturbance was evident in the eastern portion of the trench. Feature 12, a large intact post and posthole, intruded into the cultural levels at an elevation of 11.05 m NGVD. The stratigraphic position of this feature indicated that it postdated the flood event, and while it may have originated in the late occupation stratum (Stratum II), its excellent preservation suggested a post-occupation origin. To the east of Feature 12, Strata VI, VII, and VIII were post-occupation disturbances; these may represent drainage channels that later filled with alluvium. Strata below the cultural levels in Trench 1 have been described previously. They are part of a soil package that consists of multiple stacked sola of late Holocene age, deposited during the development of Meander Belt No. 1.

Trench 6

Trench 6, in Block H, was excavated on an east-west line perpendicular to the bankline of the Mississippi River (Figures 64 and 130). Trench 6 began at 12.45 m NGVD, the top of the modern grade at Nina Plantation. Strata I - VI were post-occupational deposits (Soil Package II) that have been described previously. Stratum VII corresponded to the late period occupation deposits in other areas of the site, and exhibited similar color and texture. Stratum VIII combined alluvial deposits with underlying gray silty clays; the base of this stratum was at 11.05 m NGVD. Both of these strata were sterile.

Trench 8

Trench 8 was the northernmost of the trenches excavated during archeological mitigation at Nina Plantation (Figures 64 and 131). The elevation of the top of Stratum I, in the profile of Trench 8, was reflective of the generally lower elevations in this area of the site, reflecting less deposition during the twentieth century. Stratum IV was the first cultural stratum; it had an elevation of approximately 11.25 m NGVD. An extremely light density deposit of cultural material was recovered from this stratum, including five sherds of whiteware, two unidentified iron fragments, and several brick fragments. No cultural materials were recovered from Strata V, VI, or VII. Stratum VIII included concentrations of coal and coal slag, but no other cultural materials. The presence of this deposit at an elevation of 10.6 m NGVD remained unexplained, although the presence of a rodent burrow in this stratum suggested the possibility of bioturbation.



STRATUM I: 10YR 5/3 BROWN SLIGHTLY SANDY SILT BANDED WITH 10YR 6/4 LIGHT YELLOWISH BROWN SLIGHTLY SANDY SILT AND 10YR 5/4 YELLOWISH BROWN SLIGHTLY SANDY SILT.

STRATUM II: 10YR 4/1 DARK GRAY SLIGHTLY SILTY CLAY.

STRATUM III: 10YR 5/4 YELLOWISH BROWN SANDY SILT MIXED WITH 2.5Y 5/4 LIGHT OLIVE BROWN SANDY SILT AND 10YR 5/1 GRAY SANDY SILT INCLUDING CHARCOAL AND BRICK FLECKING.

STRATUM IV: 10YR 4/1 DARK GRAY CLAYEY SILT WITH CHARCOAL, BRICK, AND MORTAR FLECKING.

STRATUM V: 2.5Y 5/1 GRAY SILT BANDED WITH 5Y 5/4 OLIVE SILT.

STRATUM VI: 10YR 4/2 DARK GRAYISH BROWN CLAYEY SILT MOTTLED WITH 10YR 4/6 DARK YELLOWISH BROWN CLAYEY SILT.

STRATUM VII: 10YR 4/2 DARK GRAYISH BROWN SILTY CLAY MOTTLED WITH 10YR 4/6 DARK YELLOWISH BROWN SILTY CLAY (HIGHER CLAY MIX).

STRATUM VIII: 10YR 4/2 DARK GRAYISH BROWN SILTY CLAY MOTTLED WITH 10YR 4/6 DARK YELLOWISH BROWN SILTY CLAY.

STRATUM IX: 10YR 5/1 GRAY SILTY CLAY MOTTLED WITH 10YR 4/6 DARK YELLOWISH BROWN SILTY CLAY.

STRATUM X: 10YR 4/2 DARK GRAYISH BROWN SILTY CLAY MOTTLED WITH 10YR 3/2 VERY DARK GRAYISH BROWN SILTY CLAY.

STRATUM XI: 10YR 5/1 GRAY CLAYEY SILT MOTTLED WITH 10YR 4/6 DARK YELLOWISH BROWN CLAYEY SILT.

STRATUM XII: 2.5Y 4/1 DARK GRAY CLAY MOTTLED WITH 10YR 4/6 DARK YELLOWISH BROWN CLAY.

STRATUM XIII: 2.5Y 4/2 DARK GRAYISH BROWN CLAYEY SILT MOTTLED WITH 10YR 4/6 DARK YELLOWISH BROWN CLAYEY SILT.

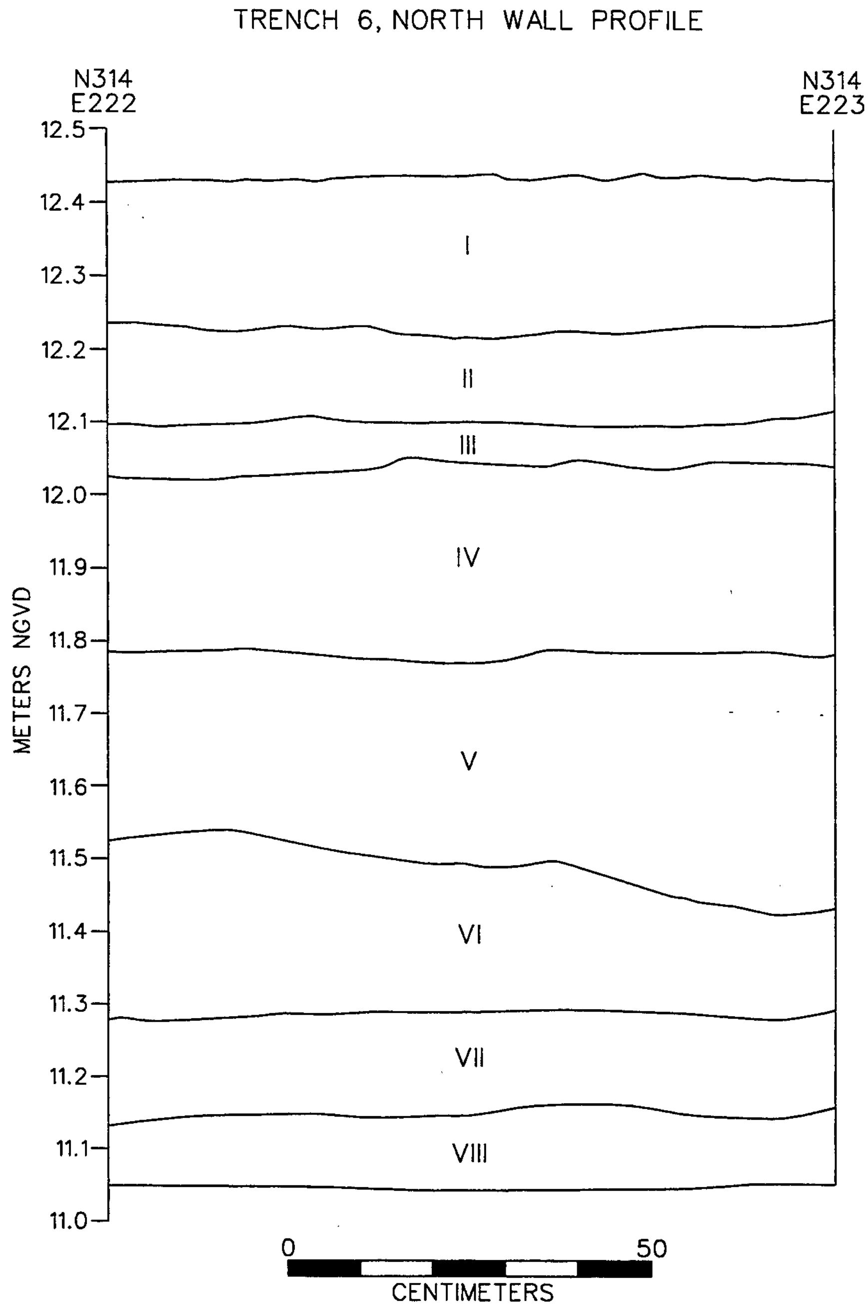
STRATUM XIV: 2.5Y 4/2 DARK GRAYISH BROWN CLAYEY SILT MOTTLED WITH 10YR 4/6 DARK YELLOWISH BROWN CLAY.

STRATUM XV: 2.5Y 4/2 DARK GRAYISH BROWN SLIGHTLY SILTY CLAY MOTTLED WITH 10YR 4/6 DARK YELLOWISH BROWN SLIGHTLY SILTY CLAY AND 2.5YR 3/6 DARK RED CLAY TOWARDS BOTTOM OF STRATA.

STRATUM XVI: 2.5Y 5/1 GRAY CLAY.

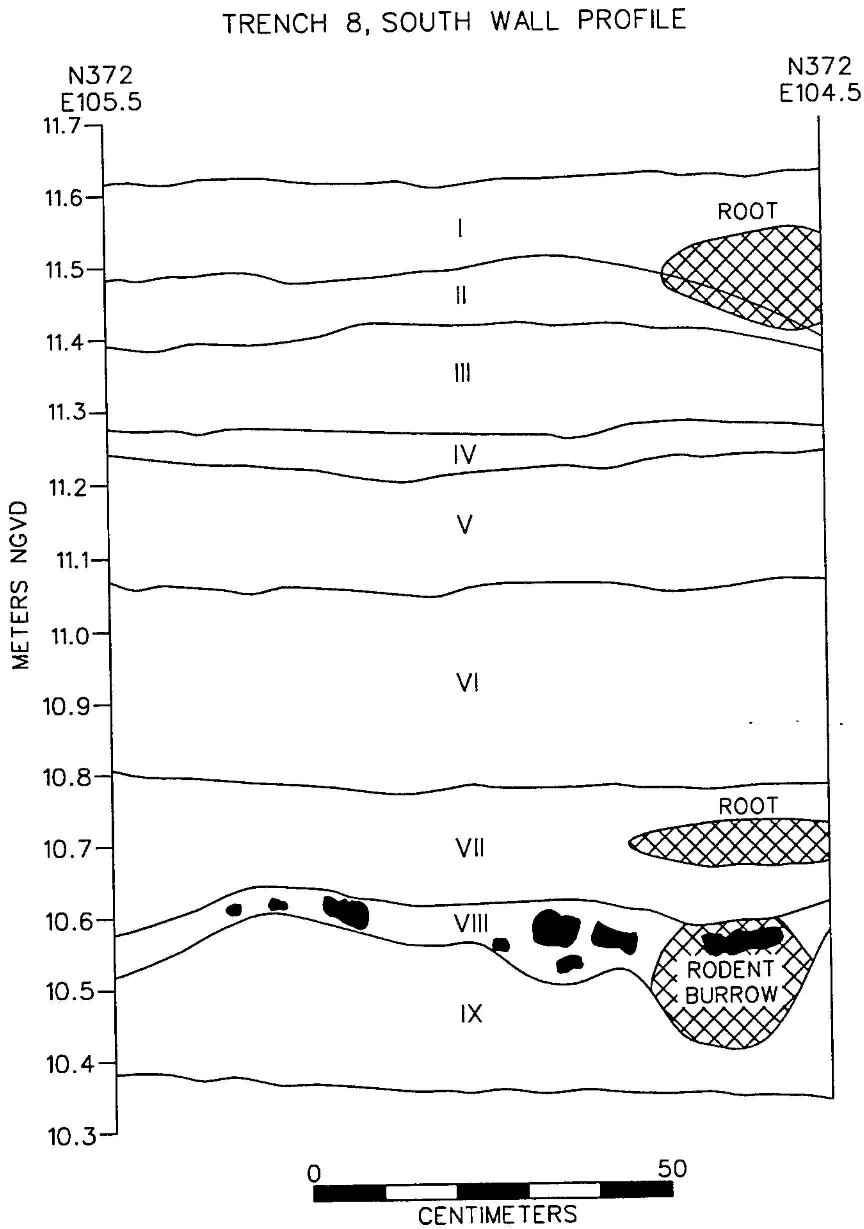
– – – – – INDEFINITE SOIL BOUNDARY

Figure 129. Profile of north wall of Trench 1 in Block C.



STRATUM I:	2.5Y 4/2 DARK GRAYISH BROWN SILTY SAND.
STRATUM II:	2.5Y 4/1 DARK GRAY SILTY SAND MOTTLED WITH 2.5Y 4/3 OLIVE BROWN SILTY SAND.
STRATUM III:	10YR 3/2 VERY DARK GRAYISH BROWN COMPACT CLAY.
STRATUM IV:	10YR 3/2 VERY DARK GRAYISH BROWN SANDY CLAY.
STRATUM V:	10YR 2/2 VERY DARK GRAYISH BROWN COMPACT CLAY.
STRATUM VI:	2.5Y 4/1 DARK GRAY SILTY SAND MOTTLED WITH 2.5Y 4/3 OLIVE BROWN SILTY SAND.
STRATUM VII:	2.5Y 3/2 VERY DARK GRAYISH BROWN SILTY CLAY.
STRATUM VIII:	2.5Y 4/1 DARK GRAY SILTY CLAY MOTTLED WITH 2.5Y 4/3 OLIVE BROWN SILTY CLAY.

Figure 130. Profile of north wall of Trench 6 in Block H.



STRATUM I: 10YR 3/2 VERY DARK GRAYISH BROWN SANDY CLAY.
STRATUM II: 10YR 4/2 DARK GRAYISH BROWN SILTY CLAY.
STRATUM III: 10YR 3/2 VERY DARK GRAYISH BROWN SILTY LOAMY CLAY.
STRATUM IV: 10YR 3/3 DARK BROWN SILTY CLAY.
STRATUM V: 2.5Y 4/3 OLIVE BROWN CLAYEY SANDY SILT.
STRATUM VI: 2.5Y 4/2 DARK GRAYISH BROWN CLAY.
STRATUM VII: 2.5Y 4/3 OLIVE BROWN SANDY SILT.
STRATUM VIII: 2.5Y 5/2 GRAYISH BROWN CLAYEY SILT.
STRATUM IX: 2.5Y 4/2 DARK GRAYISH BROWN SILTY CLAY.

DISTURBANCE

COAL AND SLAG DEPOSITS

Figure 131. Profile of south wall of Trench 8 in Block J.

Trench 9

Trench 9, located in the center of Block H, was oriented north to south (Figures 64 and 132). It intersected a previously excavated Phase II trench (Trench 1), the fill of which included newspapers and plastic (Figure 54). The primary cultural deposit in Trench 9 was identified as Stratum IV, characterized as a dark grayish brown silty sand. Artifact density was very light, with only brick fragments and unidentified iron fragments recovered. The base of Stratum IV was at an elevation of 10.93 m NGVD, consistent with occupation levels elsewhere on the site. Levels below Stratum IV were sterile.

Trenches 16 and 17

Trenches 16 and seventeen were excavated within Block I (Figure 64). Examination of cartographic evidence suggested the possibility that remains of one or more slave cabins might be present in this area (Figure 54); these two trenches were intended to verify or deny this supposition. Block I was at the edge of a low-lying, frequently flooded area to the north. Soils were very unstable, and a large north - south rift had appeared in the center of Block I. Soils to the east of this rift were approximately 0.75 m (2.46 ft) lower in elevation than the rest of the site.

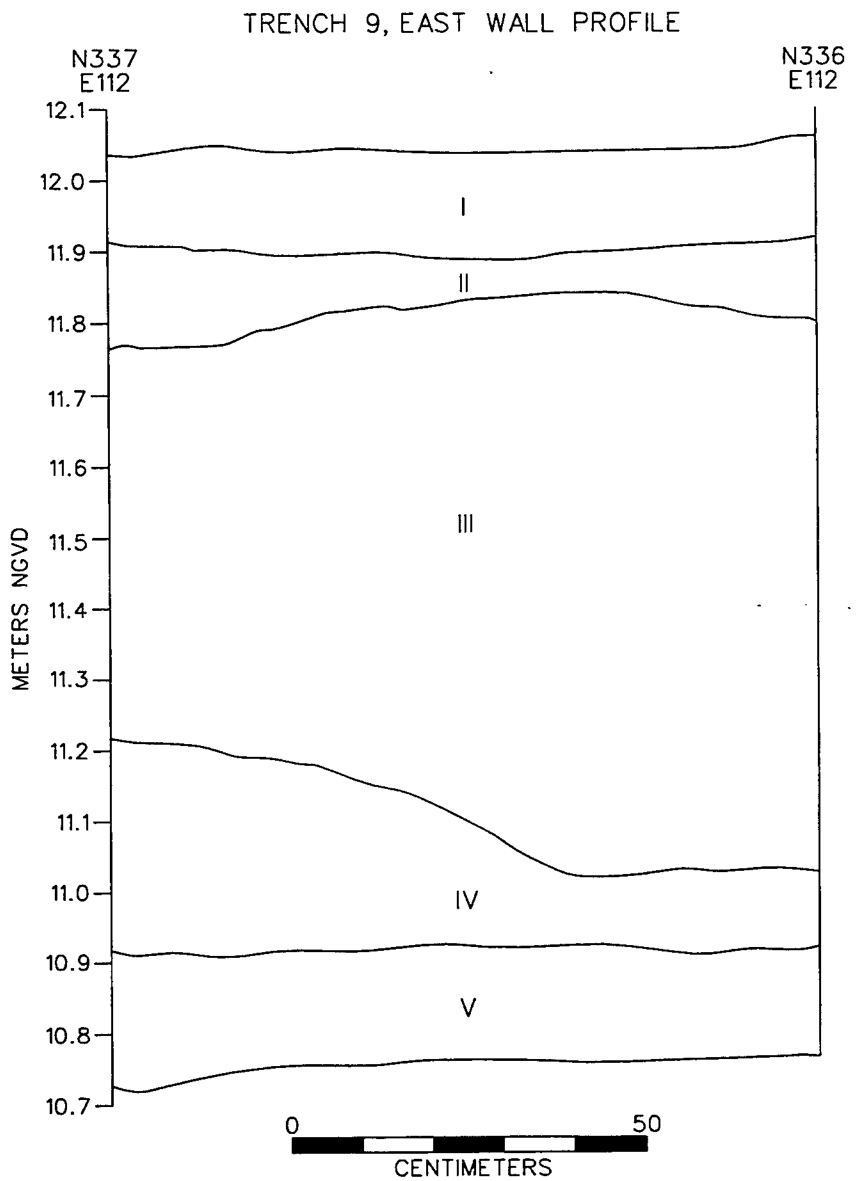
Trench 16 was positioned east of this soil subsidence; it ran from north to south for a distance of 18 m (59.06 ft). The northern end of Trench 16 crossed the conjectural location of one of the slave cabins (Figure 64). A profile of the east wall of this trench showed cultural deposits beginning at an elevation of approximately 10.9 m NGVD (Stratum VII) (Figure 133). The materials from Strata VII and VIII, presumed to represent the last periods of occupation at the site, consisted of four nails, one non-diagnostic ceramic fragment, and two brick fragments. These were recovered from the length of the 18 m (59.06 ft) trench. Strata IX was a sandy alluvial deposit, possibly corresponding to the 1851 flood deposit seen elsewhere at the site. A lens of mortar fragments (Stratum X) was apparent in portions of the trench, at an elevation of approximately 10.55 m NGVD. This lens was not continuous, and in other areas of the trench contained cinder fragments in addition to the mortar. Below this lens was a deposit that contained a light density of cultural materials (Strata IX and X). The recovered cultural materials included 17 ceramic sherds, nine bone fragments, two buttons, 35 nails, and brick and mortar fragments. None of these materials were concentrated in any area, and again were recovered from along the entire 18 m (59.06 ft) Trench 16. Levels below Stratum XII were culturally sterile.

Trench 17 was 7 m (22.96 ft) in length; it was perpendicular to Trench 16, intersecting Trench 16 on the west (Figures 64 and 134). The profile of Trench 17 offers an illustration of the severe soil subsidence in Block I. Cultural materials were present in Stratum VII of Trench 17, which corresponded to Stratum VII in Trench 16. This deposit was presumed to represent the late period occupation at the Site 16PC62. Materials recovered were very light in density, with no concentrations observed; they comprised ten ceramic sherds, one bone fragment, and five glass fragments. No cultural materials were recovered from strata below Stratum VII.

While the excavation of these two trenches revealed clear evidence of occupation in the vicinity of Block I, there was no clear evidence that remains of cabins were in close proximity. The density of cultural material recovered from these trenches was extremely light, and more indicative of secondary trash disposal than of domestic occupation in this area. Much higher densities of artifacts had been recovered from all occupied areas of the site, including the slave cabin area investigated during Phase II excavations at Nina Plantation. Overall density in the Phase II trench (Trench 2), which cut directly through the slave cabin area, was 109 artifacts per cubic meter (Yakubik 1994:391); in excess of 7,000 artifacts were recovered. In comparison, the overall density in Trench 16 was 1.8 artifacts per cubic meter; a total of 68 artifacts were recovered.

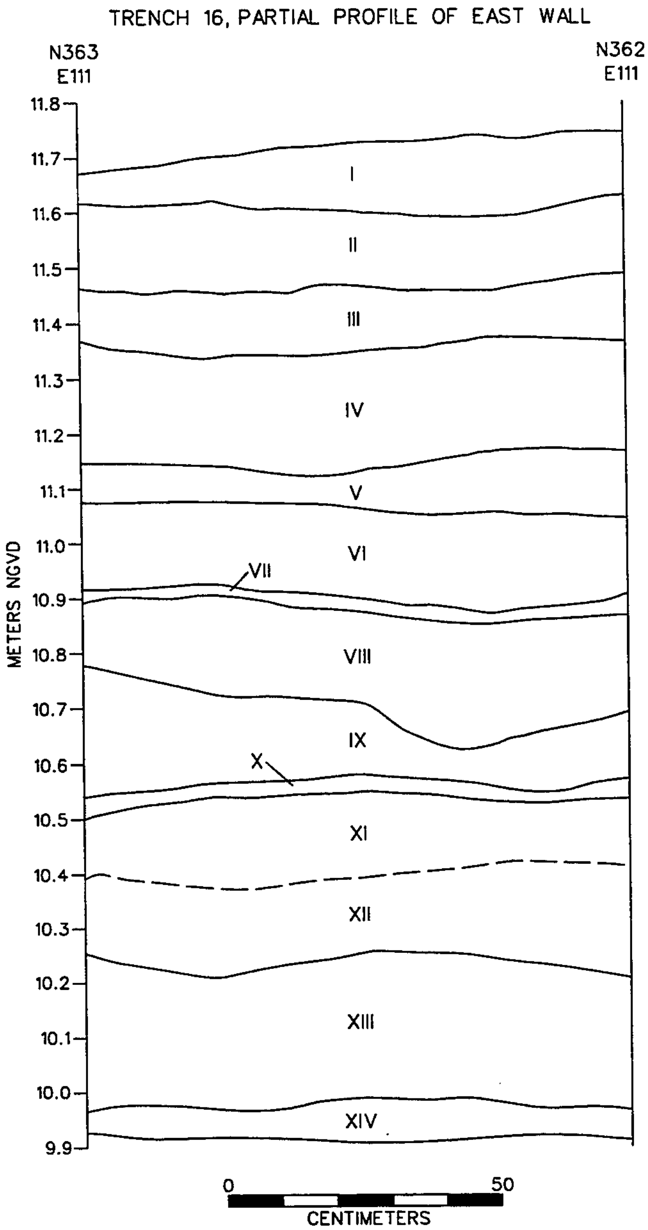
Summary and Conclusions

Mitigative excavations at Nina Plantation (16PC62) included the removal of approximately 3,400 cubic meters of twentieth century overburden, the hand excavation of 251 m^2, the recordation and investigation of 216 cultural features, and the excavation of 17 trenches. Investigations focused on two major occupation areas at the site: the Main House complex, originally constructed during the early 1820s by Jean Jarreau, and the Outbuilding complex, used for support activities



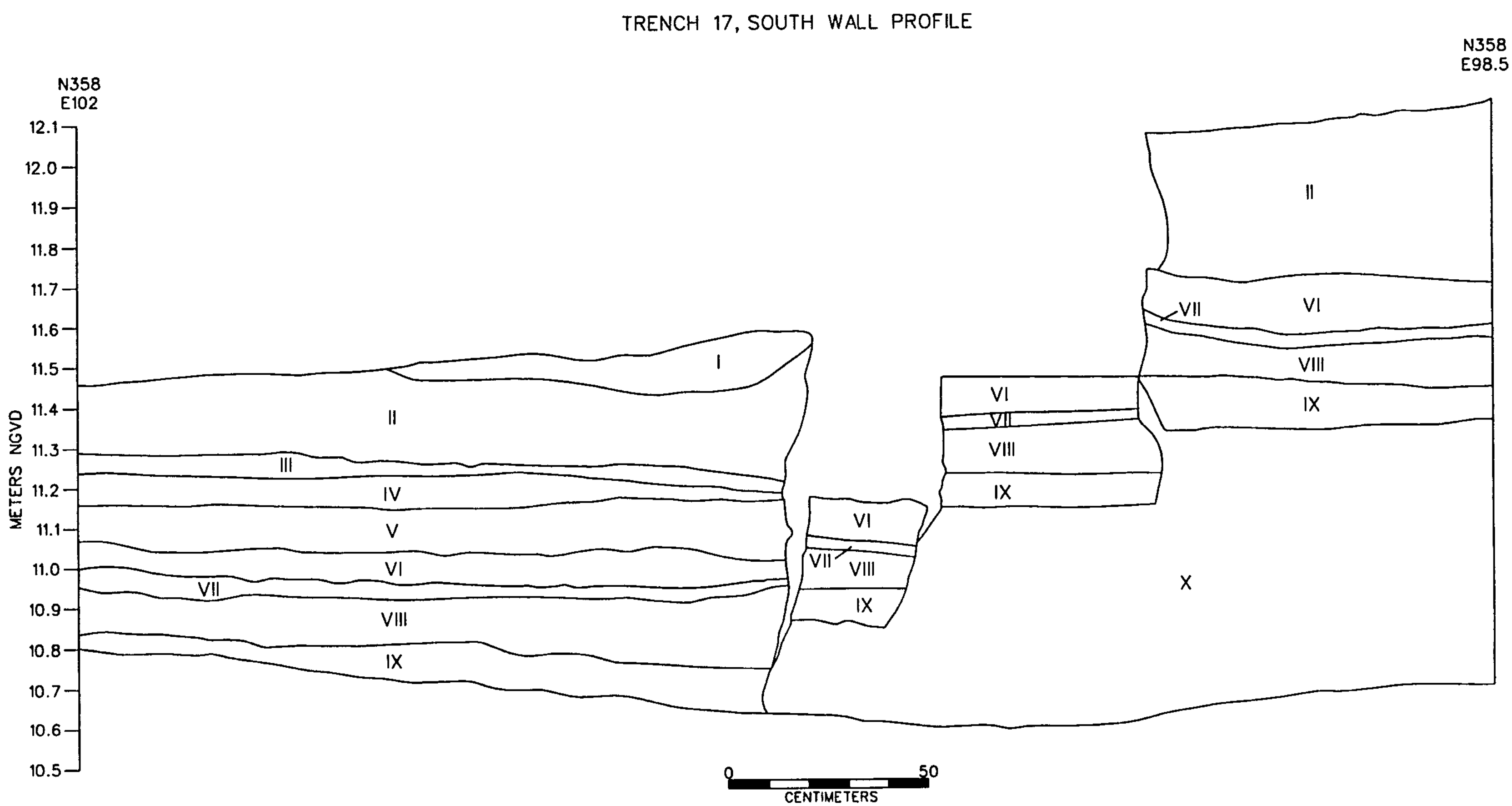
STRATUM I: 2.5Y 4/2 DARK GRAYISH BROWN SILTY SAND (DISTURBED).
STRATUM II: 2.5Y 4/3 OLIVE BROWN SILTY SAND MIXED WITH
2.5Y 4/1 DARK GRAY SILTY SAND AND SOME CLAY.
STRATUM III: 2.5Y 3/2 VERY DARK GRAYISH BROWN SILTY CLAY MIXED WITH
2.5Y 3/3 DARK OLIVE BROWN SILTY CLAY.
STRATUM IV: 2.5Y 4/2 DARK GRAYISH BROWN SILTY SAND MIXED WITH
2.5Y 4/4 OLIVE BROWN SILTY SAND.
STRATUM V: 2.5Y 3/2 VERY DARK GRAYISH BROWN SLIGHTLY CLAYEY SILTY SAND.

Figure 132. Profile of east wall of Trench 9 in Block H.



STRATUM I: 2.5Y 5/2 GRAYISH BROWN SILTY SAND WITH BANDED 2.5Y 4/3 OLIVE BROWN SANDY LOAM.
STRATUM II: 2.5Y 3/2 VERY DARK GRAYISH BROWN SILTY CLAY.
STRATUM III: 2.5Y 3/2 VERY DARK GRAYISH BROWN SILTY CLAY MOTTLED WITH 2.5Y 7/3 PALE YELLOW SILT.
STRATUM IV: 2.5Y 3/2 VERY DARK GRAYISH BROWN SILTY CLAY.
STRATUM V: 2.5Y 4/2 DARK GRAYISH BROWN CLAYEY SILT MOTTLED WITH 2.5Y 5/2 GRAYISH BROWN CLAYEY SILT.
STRATUM VI: 2.5Y 3/2 VERY DARK GRAYISH BROWN LOAMY CLAY.
STRATUM VII: 2.5Y 4/2 DARK GRAYISH BROWN CLAYEY SILT MOTTLED WITH 2.5Y 5/2 GRAYISH BROWN CLAYEY SILT.
STRATUM VIII: 2.5Y 3/2 VERY DARK GRAYISH BROWN LOAMY CLAY.
STRATUM IX: 2.5Y 5/3 LIGHT OLIVE BROWN SILT MOTTLED WITH 2.5Y 5/1 GRAY SILTY CLAY.
STRATUM X: LENS OF MORTAR FRAGMENTS.
STRATUM XI: 2.5Y 4/1 DARK GRAY LOAMY SILT WITH BRICK AND MORTAR FRAGMENTS.
STRATUM XII: 2.5Y 4/1 DARK GRAY LOAMY SILT.
STRATUM XIII: 2.5Y 5/3 LIGHT OLIVE BROWN SILT.
STRATUM XIV: 2.5Y 4/3 OLIVE BROWN SILTY CLAY.

Figure 133. Profile of east wall of Trench 16 in Block I.



STRATUM I:	10YR 4/3 BROWN FINE SANDY SILT.
STRATUM II:	10YR 3/2 VERY DARK GRAYISH BROWN FINE SANDY CLAY.
STRATUM III:	10YR 4/3 BROWN FINE SANDY CLAY MOTTLED WITH 10YR 4/2 DARK GRAYISH BROWN FINE SANDY CLAY.
STRATUM IV:	10YR 3/2 VERY DARK GRAYISH BROWN CLAY.
STRATUM V:	10YR 4/2-3/2 DARK GRAYISH BROWN TO VERY DARK GRAYISH BROWN FINE SANDY CLAY.
STRATUM VI:	10YR 4/3 BROWN FINE SANDY SILT.
STRATUM VII:	10YR 4/2 DARK GRAYISH BROWN CLAY MIXED HEAVILY WITH 2.5Y 2.5/1 BLACK CHARCOAL AND 5YR 5/6 YELLOWISH RED POWDERED BRICK.
STRATUM VIII:	10YR 4/2 DARK GRAYISH BROWN CLAY.
STRATUM IX:	10YR 5/2 GRAYISH BROWN SANDY SILT.
STRATUM X:	10YR 5/2 GRAYISH BROWN CLAY MOTTLED WITH 10YR 4/3 BROWN CLAY.

Figure 134. Profile of south wall of Trench 17 in Block I.

for the main house, and occupied by slaves/servants employed in a domestic capacity.

The main house complex included the original core structure, the south wing, the north wing, and the north and south cisterns. Excellent stratigraphic integrity permitted the recordation of a temporal sequence of construction and occupation in the main house area. The first two structures to be built were the core of the main house, and the south wing. Evidence suggested that the south wing originally was an independent building; during remodeling in the 1830s or 1840s, it was attached to the core as a wing. The two flanking cisterns were added at the same time. The north wing addition was constructed after mid-century, and post-dated the flood of 1851. Designed and built in a manner that added symmetry to the main house, it is likely to have been the work of the Allens, who purchased the plantation in the 1850s.

The Outbuilding complex included Structures 1 and 2, both constructed using earthfast techniques. Evidence of mid nineteenth century renovation was recovered at Structure 1, where a substantial brick chimney replaced an earlier wood and clay chimney, and a wooden floor was constructed over the original dirt surface. Structure 2 was less well preserved, but provided ample evidence that there had been no central chimney, and that a dirt floor surface had been present throughout its occupation. Evidence was found in Structure 2 of a central partition wall built using simple *piquette en terre* construction methods.

The stratigraphy in these occupied areas of the site was consistent. The original occupation surface was at an elevation of approximately 10.95 m NGVD. A deposit of early occupational debris was observed in most areas of the site. A layer of alluvium deposited by a flood event in 1851 was present in almost all portions of the site; generally, the elevation of this deposit was between 11.15 and 11.25 m NGVD. Occupational debris post-dating the flood was present at elevations above this, and was capped by debris from the destruction of the plantation structures circa 1890. This general stratigraphic sequence differed slightly only in the north and south wing areas, where occupational patterns created variation in the sequence.

CHAPTER IX

ANALYTICAL RESULTS

Introduction

This archeological data recovery effort was designed to produce a synthetic characterization of nineteenth century occupation at Nina Plantation. The recovered data permitted study of intra-site patterning, and temporal variation in that patterning; it also facilitated extra-site comparative study. The data recovered from the excavations at Nina Plantation have been subjected to various types of analysis, to meet the specific research goals of the project. The analytical methods employed during this study, and the results of these analyses, are reviewed in this chapter. A summary and interpretation of the field and analytical results are included in Chapter X.

Temporal and Spatial Analytical Units

Excavated areas of Site 16PC62 were assigned to both temporal and spatial analytical units, to facilitate examination of intra-site patterning and change. Questions about chronology, status differentiation, disparate access or use of material goods, and changes in plantation layout and activity areas required the division of the site into synchronic, spatial analytical units. Alternatively, temporal analysis required the division of the site into analytical units based on stratigraphic sequence and historiography; these temporal analytical units then could be compared across the entire site, and they also could be used to examine changes within each spatial unit.

During analysis, the primary spatial divisions were the excavation blocks. As reviewed in Chapter VIII, the boundaries of these 30 x 30 m (98.4 x 98.4 ft) areas coincided rather neatly with the location of the architectural components of the site (see Figure 54). Block C incorporated the Outbuilding complex, including both Structure 1 and Structure 2, in addition to associated midden deposits. Blocks D and E contained the Main House complex. Further separation of individual components of each block, for example the division of Block C by structures (e.g., Structures 1 and 2), permitted comparison within and between each structural complex.

Because of the number and complexity of components across the site, and the number of levels and strata represented in each component, intra-site interpretation required application of numerous discrete analytical units. Using these spatial and temporal analytical units, an interim site sequence was developed that provided uniformity, and which permitted cross-site comparisons. Specific lists of analytical units were developed for excavations in Blocks C, D, and E. These analytical units derived from a combination of observed stratigraphic relationships, spatial patterning, soils, elevation, material content, and other relevant characteristics of each block. Specific analytical units were assigned to each excavated level; lists of analytical units within each block are contained in Tables 10, 11, and 12, and in Appendix I. All provenience tables in Appendix I include the analytical unit number assigned to each excavated level. Because Block F contained no structural features or significant midden deposits that would have permitted correlation with the sequences in Blocks C, D, and E, materials recovered from Block F were not included in intra-site spatial analyses. However, materials recovered from Block F were included in site-wide analyses and chronologies.

Table 10. List of Analytical Units Assigned to Block C.

BLOCK	ANALYTICAL UNIT	AREA	DESCRIPTION
C	00	All	No level or strata assignable
C	01	Kitchen interior	Earliest construction
C	02	Kitchen interior	Occupation debris associated with wood chimney
C	03	Exterior all	Alluvium associated with 1850-1851 flood
C	04	Kitchen interior	Reconstruction including brick chimney and plank floor
C	05	Kitchen interior	Occupation debris associated with brick chimney use
C	06	Kitchen interior	Final destruction
C	07	Kitchen interior	Post-destruction debris
C	08	Kitchen interior	Destruction of wood chimney
C	09	Kitchen interior	Sill fill - undifferentiated
C	10	Exterior all	Earliest occupation debris
C	11	Exterior all	Occupation debris between flood and destruction
C	12	Kitchen exterior	Post-occupation deposit
C	13	Kitchen exterior	Redeposited midden
C	14	All	Sterile subsoil
C	15	Kitchen exterior	Late occupation surface-associated with sequence 11
C	16	Structure 2 interior	Occupation debris between flood and destruction
C	17	Structure 2 interior	Alluvium associated with 1850-1851 flood
C	18	Structure 2 interior	Earliest occupation
C	19	Structure 2 interior	Initial construction
C	20	Structure 2 interior	Sill fill - undifferentiated
C	21	Kitchen exterior	19th century/not assignable
C	22	All	General late midden surface
C	23	Trench 1	No stratigraphic assignment
C	24	Trench 4	No stratigraphic assignment
C	25	All	General surface collection

Table 11. List of Analytical Units Assigned to Block D.

BLOCK	ANALYTICAL UNIT	AREA	DESCRIPTION
D	01	All	General surface
D	02	All	Top of latest occupation surface
D	03	All	No stratigraphic integrity
D	04	All	Post-occupation disturbance
D	05	South wing/core	Last occupation debris
D	06	South wing/core	Post 1850-1851 flood construction
D	07	South wing/core	Flood of 1850-1851
D	08	South wing/core	Occupation debris from construction of south wing to 1850-1851 flood
D	09	Core	Occupation debris from initial core construction to south wing construction
D	10	South wing/core	Occupation debris from initial core construction to 1850-1851 flood
D	12	South wing/core	Final destruction debris
D	13	All	Flood prior to 1850 - 1851
D	14	All	Sterile
D	15	South wing	Initial construction of south wing
D	16	Core	Initial construction of core

Table 12. List of Analytical Units Assigned to Block E.

BLOCK	ANALYTICAL UNIT	AREA	DESCRIPTION
E	01	All	General surface
E	02	All	Top of latest occupation surface
E	03	All	No stratigraphic integrity
E	04	All	Post-occupation disturbance
E	05	Core	Initial construction of core
E	06	North wing	Initial construction of north wing
E	07	All	Flood of 1850-1851
E	08	Core	Earliest occupation debris
E	09	North wing/core	Latest occupation debris - upper midden
E	10	North wing/core	General 19th century occupation debris
E	11	North wing/core	Destruction debris
E	12	North wing/core	Post destruction sheet midden
E	13	North wing/core	Construction/repairs between initial core construction and flood of 1850-1851
E	14	North wing/core	Construction/repairs between flood of 1850-1851 to final destruction
E	15	Core	Occupation debris between initial core construction to flood of 1850-1851- "red" midden
E	16	North wing	Occupation debris associated with fireplace (f66)
E	17	All	Flood after 1850-1851
E	18	Core	Construction in 1840s

Building a Whole Site Chronology

The process of building a site-wide chronology began with definition of the detailed set of discrete analytical units for each area of the site described above; the complex stratigraphy of the site necessarily generated a large number of analytical units in each excavation block. A block analytical unit number was assigned to each excavated level in Blocks C, D, and E. Block analytical unit assignation was based on a combination of observed soil characteristics; stratigraphic relationships; the presence, absence, and identification of recovered cultural materials; the depth of the deposit: and, historical documentation of site events. These fine-grained analytical units (Tables 10 - 12) permitted differentiation between structures, as well as between deposits on the interior and the exterior of those structures. Analytical differentiation also was dependent upon the relative stratigraphic position of each level. For example, levels specific to the clay hearth in Structure 1 were differentiated from the positionally superior levels associated with the use of the brick chimney; each of these was assigned to a different block analytical unit.

In order to facilitate comparison of widely separated but contemporaneous areas of the site, and in order to permit their arrangement in relative chronological order, each excavated level also was assigned a more general, site-wide analytical unit designator. These site-wide analytical units are listed in Table 13; they represented events during the occupation of Nina Plantation that either were stratigraphically visible, or that could be extrapolated from recovered cultural material (Table 13). Based on the documented historiography of the site, on the relative stratigraphic positions, and on associations of the site-wide analytical units, an interim site chronology was developed. No dates were assigned to this chronology until after primary artifact analysis was completed; the position of

Table 13. List of Site-Wide Analytical Units Assigned to Site 16PC62.

ANALYTICAL UNIT	DESCRIPTION
01	General surface (sfc)
02	Upper midden surface (ums)
03	No stratigraphic integrity
04	Post-occupation disturbance
05	Earliest construction
06	Second construction phase
07	Third construction phase
08	Occupation between 1820 and 1850 flood
09	Occupation between 1850 flood and 1890 destruction
10	Occupation between second and third construction
11	Final destruction of kitchen/outbuildings
12	Final destruction of main house
13	1850-1851 flood
14	Subsoil
15	Remodeling of kitchen/ brick chimney addition
16	19th century feature/ not assignable
17	Flood prior to the 1850-1851 flood
18	Flood after the 1850 - 1851 flood

each analytical unit in the interim chronology indicated its relative chronological placement, rather than its correspondence to a specific date.

The following descriptions pertain to the major analytical units represented in the interim site chronology. These construction, occupation, flood, and destruction events were distinguished by stratigraphic position and association; in addition, the material content of the excavated levels was frequently distinctive, and permitted confident assignment of the level to an analytical unit.

Flooding Deposits

The major episode of flooding and alluvial deposition that was present across most of Site 16PC62 has been dated to ca. 1851 (see Chapters II, III, IV, and VIII of this report). This stratum provided stratigraphic clarity across most of the site, and it provided a key to the differentiation of occupation and construction periods. While floods were recorded in the Pointe Coupee region in 1851, 1858, and 1867, only the 1851 flood was of such intensity that it prevented the production of a sugar crop both during the flood year and the year following; the 1858 and 1867 floods did not appear to impede production at all (Champomier 1858, 1867). According to Champomier (1852:5), Pecan Grove (Nina) plantation was "entirely overflowed" during the 1851 event, while neighboring properties were merely "overflowed."

Assigned to interim period *13* (Chart 1), levels with stratigraphic evidence of this major flood event were found in the majority of excavation units on the site; these levels sealed pre-1851 deposits. Interim period *13* included block analytical units D-07, E-07, and C-03 (Chart 1). Minor flood deposits, limited in distribution and intensity, were encountered during excavation, but these did not possess the analytical utility of the clearly datable and ubiquitous interim period *13* flood deposits. These secondary flood episodes are listed on Tables 10 - 12; they either pre-dated or postdated the 1851 event.

Construction Periods

Three periods of construction were identified at Nina Plantation; they represented in the interim chronology as Analytical Units *05, 06, 07*, and *15* (Chart 1). The earliest of these construction stages, designated interim period *05,* represents the initial construction of the core of the main house, and of the outbuildings. The stratigraphic levels included in this interim period were block analytical units C-01, the kitchen interior; C-19, the structure 2 interior; D-16, the core of the main house; and E-05, also, the core of the main house. The stratigraphic position of these interim period 05 levels, directly above sterile soils, was key to their assignment to this interim period. Considering historical documentation (see Chapter IV), a date range of ca. 1820-1830 was suggested for this period.

Those excavated stratigraphic levels clearly associated with a second stage of construction at the site were assigned to interim period *06.* Evidence of second-stage construction included stratigraphic position above early occupation debris, and the presence of small amounts of construction materials such as brick fragments. This interim period correlated with the attachment of the south wing to the core of the main house in Block D (block analytical unit D-15), and with minor construction or reconstruction activities in Block E (block analytical unit E-18). No closely dateable, diagnostic materials were recovered from any of the Interim period *06* levels; the date range of recovered ceramics fell in the first half of the nineteenth century. Based on stratigraphic position, a date range of ca. 1840-1850 was assigned to interim period *06* construction.

The third construction period was designated interim period *07;* it correlated with construction or repairs that took place after the flood of ca. 1851 (interim period *13*). In Block E, this third construction phase included analytical units E-06 and E-14, representing the initial construction of the north wing of the main house, and construction or repairs undertaken after 1851. In Block D, this interim period included levels assigned to analytical unit D-06, construction or repairs after 1851. Because of the specific nature of construction and repairs undertaken in the outbuilding complex, the third phase of construction in Block C was assigned to interim period *15*, rather than to interim period *07*. Because both represent construction or repairs undertaken after the flood of 1851, the analytical units subsequently were combined into interim period *07/15* (Chart 1). In Block C, this interim period was represented by analytical unit C-04, corresponding to the construction of the brick chimney and hearth (Feature

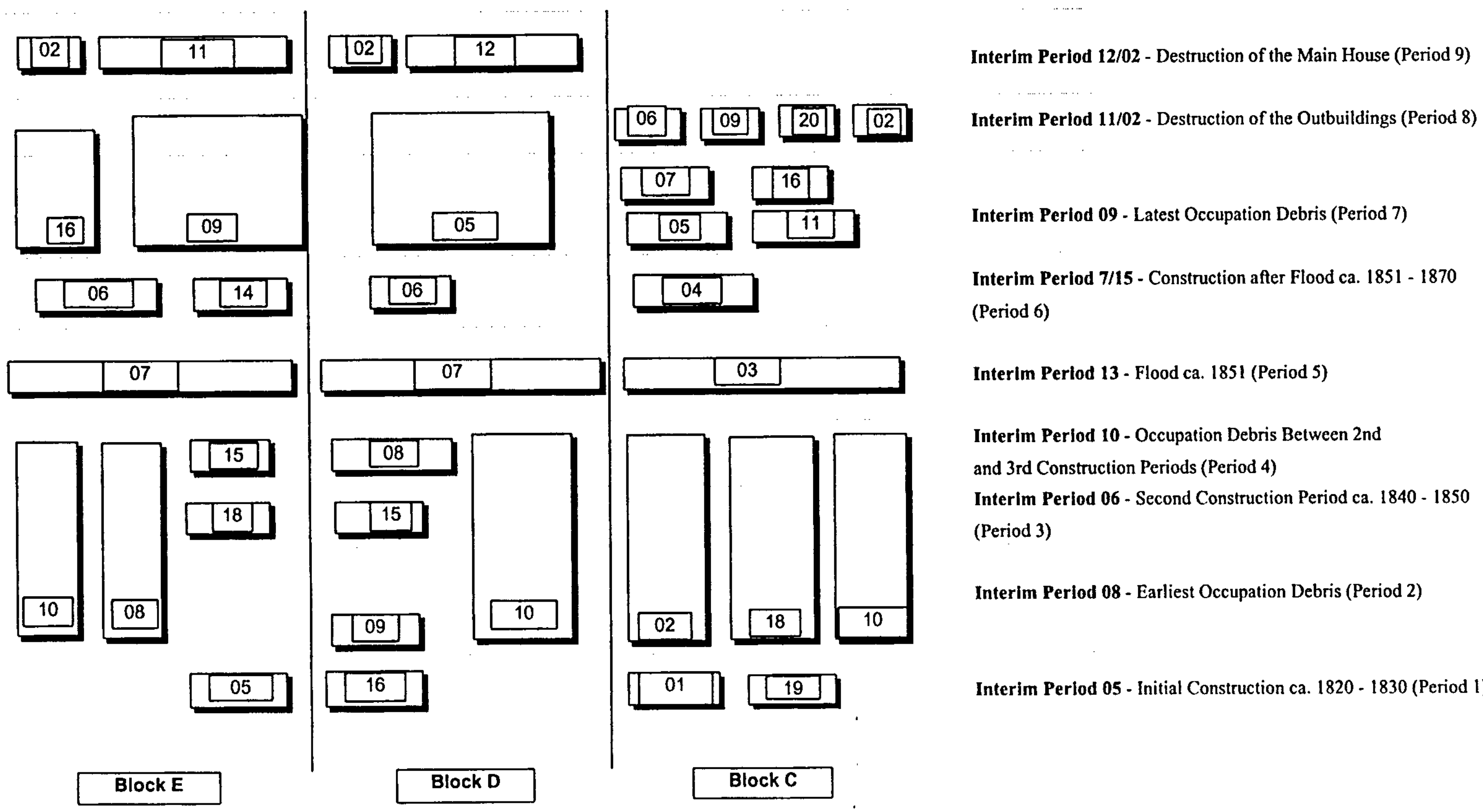


Chart 1. Site periods (Main Sequence) and area sequences of Site 16PC62.

116) in Structure 1, and to the simultaneous destruction of the earlier wood and clay chimney (Features 197, 204, 218, 224, 226, and 229). The stratigraphic position of the interim period *07* and *15* levels, above the 1851 flood deposits, allowed their relative dates to be fixed post 1851; no temporally diagnostic materials were recovered to permit more specific dating. However, economic constraints on the plantation economy during the Civil War make it likely that the north wing of the main house was built before the start of the War, and that remodeling of Structure 1 took place either at that time, or after emancipation.

Occupational Sequences

The bulk of the data recovered from excavations at Nina Plantation derived from levels created during the continued occupation of the site. The distribution and composition of this midden debris varied widely between blocks; in general, the occupational soils were characterized by a dark, organically rich soil, with charcoal inclusions. Material density varied from relatively light to extremely dense; changes in architecture and in activity areas were reflected in the volume and character of the deposited cultural debris. The spatial distribution and the temporal changes in patterns of distribution are examined in detail later in this chapter. As noted above, the interim relative chronology of occupation deposits and their corresponding analytical units are depicted on Chart 1.

The earliest occupation debris (interim period *08)* was represented in Block C by analytical units C-02, C-18, and C-10. These corresponded to debris deposited on the interiors of Structures 1 and 2 (analytical units C-02 and C-18), and to midden deposits found in the yard areas of these outbuildings (analytical unit C-10). These levels post-dated the interim period *05* construction debris, but they were stratigraphically inferior to the 1851 flood deposit (interim period *13*). In Block D, these earliest midden deposits were represented by levels in analytical units D-09 and D-10. Levels in analytical unit D-09 originated during the time between initial construction (interim period *05*) and the construction of the south wing of the main house (interim period *06*). Analytical unit D-10 levels were attributable only to the relative time span between interim period *05* and the 1851 flood (interim period *13*). In Block E, these early midden levels were less widespread, and were represented by analytical units E-08, and E-10. Interim period *08* was assigned a date range from ca. 1820-1851.

Levels composed of occupational debris deposited between the second construction phase and the circa 1851 flood (interim periods *06* and *13*) in Blocks D and E (analytical units D-08 and E-15), were assigned to interim period *10*. Levels from this interim period were not present in Block C. These levels were assigned a date range of circa 1840-1851, based on stratigraphic position relative to earlier deposits and to the 1851 flood stratum, and on the direct historical approach

The final levels of occupational debris postdated the mid-century flood, and contained materials discarded until the time of site abandonment and destruction. These interim period *09* levels were found in Block C (analytical units C-05, C-07, C-11, and C-16), Block D (analytical unit D-05), and in Block E (analytical units E-09 and E-16). In the area of the main house complex, this interim period represents the longest time span of any of the analytical periods, from ca. 1851-1890. In Block C, the third construction episode may have taken place concurrently with the construction of the north wing, between the 1851 flood and the start of the War, or it may have occurred after emancipation, as late as circa 1870. The final destruction date for the outbuildings is not known, and may have fallen between 1883, when they last were depicted on a Mississippi River Commission map, and 1890. A late third construction date, and an early destruction date, would significantly shorten the final period of deposition.

Destruction Periods

The final destruction of the Outbuilding complex has been assigned to interim periods *02* and *11*, represented in Block C by analytical units C-02, C-06, C-09, and C-20. Interim period *02* materials were recovered during controlled surface collections that were conducted immediately after mechanical removal of the overburden in each block. No diagnostic materials recovered from the interim period *02* or interim period *11* levels provided temporal data with sufficient specification to date this episode within a time period narrower than that assigned - ca. 1884-

1891. Because the outbuildings were depicted on an 1883 Mississippi River Commission map, their date of destruction must have fallen between that date and 1890, the date of final abandonment of the plantation. The destruction of the Main House complex in Blocks D and E was assigned to interim periods *02* and *12*, which incorporated analytical unitsD-02, D-12, E-02, and E-11. Based on historical documentation (see Chapter IV), this event can be reliably dated from 1890-1891, when the plantation was moved to the land side of the newly constructed levee.

Final Chronology

Using the results of the interim site chronology, the historiography of the site, and the results of the primary artifact analysis, a final site chronology was prepared. In this chronology (Table 14), archeological periods were defined for the sequential events that occurred during the occupation of Nina Plantation, or for the spans of occupation between defining historical archeological events. The dates assigned to these periods were interpolated from relevant historical or material data. Not all periods were assigned date ranges, although the relative chronology can be inferred from the position in the chronological sequence.

Combination of Periods

Many of the analyses conducted using data from Site 16PC62 employed various combinations of the above-described analytical units or periods. The most common configurations were groups of "early" (pre 1851) or "late" (post 1851) interim periods and analytical units. These combinations of specific analytical units permitted broad comparison of the terminal antebellum/postbellum deposits with the largely antebellum deposits separated by the 1851 flood stratum. Early periods were considered to include interim periods *05*, *06*, *08*, and *10*, and late periods included interim periods *02*, *07*, *09*, *11*, *12*, and *15*. While some cultural materials were recovered from Period *13* (flood) levels, they were treated as a transitional period and were not normally included in these analyses.

Table 14. Final Chronology at Site 16PC62.

FINAL PERIOD	DESCRIPTION	INTERIM PERIOD
Period 9	Destruction of the Main House	12, 02
Period 8	Destruction of the Outbuildings	11, 02
Period 7	Latest Occupation Debris	09
Period 6	Construction after Flood (1851 - 1870)	07, 15
Period 5	Flood (1851)	13
Period 4	Occupation between Second and Third Construction Periods	10
Period 3	Second Construction Period	06
Period 2	Earliest Occupation Debris	08
Period 1	Initial Construction (1820 - 1830)	05

Ceramics Analysis

Ceramics are one of the most valuable forms of data recovered from historical sites. Exhibiting excellent archeological visibility, ceramics are useful in socio-economic, behavioral, demographic, and chronological reconstructions. Ceramics were used during a comparative examination of socio-economic status at Nina Plantation, in analysis of ceramic forms; ceramics, as well as faunal data, were used to elucidate patterns in foodways and diet. Ceramics also were included in functional analyses, which examined behavioral patterns and activity areas at the site.

General Ceramic Distribution

While ceramics were prevalent across the site, concentrations were noted in some proveniences. Tables 15 - 17 present the distribution of ceramic data by excavation block, unit, and period. These data were plotted as contour plans of the distribution of ceramics at Nina Plantation. Contour plans were prepared for ceramics recovered during the Early (pre-1851) period, and during the Late (post-1851) period. Figure 135 depicts the distribution of ceramics recovered during the Early period. While ceramics were present across the site, a concentration was recovered from Block D, in the area of the core of the main house. During the Late period, an alteration in the distributional pattern (Figure 136) suggests changes in activity areas at the site. To investigate these changes in greater depth, more detailed comparative analyses were conducted. These are reviewed in the following sections of this chapter. Interpretation of temporal differences is contained in Chapter X of this report.

Table 15. Distribution of Recovered Ceramics by Excavation Unit and Block Analytical Unit in Block C.

UNIT	BLOCK ANALYTICAL UNIT								
	04	05	08	09	11	13	15	16	TOTAL
001	0	0	5	0	0	0	0	0	**5**
002	0	0	40	0	0	4	0	0	**44**
003	0	0	0	0	0	5	0	0	**5**
004	0	0	22	43	0	0	0	0	**65**
005	0	0	6	117	0	8	0	0	**131**
006	0	0	5	42	4	0	1	0	**52**
007	0	0	12	98	22	22	1	0	**155**
008	0	0	48	101	0	1	0	0	**150**
010	0	0	0	28	0	0	0	0	**28**
011	271	0	0	0	0	0	0	0	**271**
012	0	0	0	100	26	0	0	0	**126**
013	0	0	0	53	14	0	6	0	**73**
014	0	0	0	35	0	0	0	0	**35**
015	0	0	0	77	0	2	0	0	**79**
016	0	3	0	1	0	0	0	0	**4**
017	0	0	6	88	0	3	0	0	**97**
018	2	0	0	39	0	12	0	0	**53**
019	0	0	6	228	0	8	0	0	**242**
020	0	0	0	45	0	0	0	0	**45**
021	0	0	0	2	0	0	0	0	**2**
023	0	0	0	66	0	0	0	0	**66**
024	0	0	25	50	0	11	0	0	**86**
025	0	0	0	80	0	0	24	0	**104**
026	0	0	0	99	0	0	11	0	**110**
027	0	0	0	46	0	0	0	0	**46**
028	0	0	0	51	0	0	0	0	**51**
029	0	0	0	25	0	0	0	0	**25**
030	0	0	0	59	0	0	1	0	**60**
031	0	0	3	91	3	0	0	0	**97**
032	0	0	0	99	0	0	11	0	**110**
033	0	0	0	52	0	0	1	0	**53**
034	0	0	0	75	10	0	1	0	**86**
035	0	0	0	39	36	0	4	0	**79**
036	0	0	0	13	20	0	4	0	**37**
037	0	0	3	85	11	0	1	0	**100**
038	0	1	18	98	1	2	0	0	**120**
039	0	0	8	75	20	0	1	0	**104**
040	0	0	0	12	49	0	0	0	**61**
041	0	0	1	92	2	0	4	0	**99**
042	0	1	0	36	0	5	0	0	**42**
043	0	0	0	40	0	12	0	0	**52**
044	0	0	24	72	0	17	0	0	**113**
045	0	0	7	17	0	17	0	0	**41**
046	0	0	0	16	0	7	0	0	**23**
047	0	0	2	41	4	0	0	0	**47**
048	0	0	3	29	2	25	0	0	**59**
049	0	0	10	72	0	16	0	0	**98**
050	0	0	0	40	0	0	0	0	**40**
051	0	0	0	28	0	0	0	0	**28**
052	0	0	0	33	0	5	0	0	**38**
053	0	0	0	11	0	0	0	0	**11**
054	0	0	0	39	3	0	0	0	**42**
055	0	0	0	34	0	0	0	0	**34**
056	0	0	1	14	3	31	0	0	**49**
057	0	0	1	39	0	0	0	0	**40**

Table 15, continued

UNIT	BLOCK ANALYTICAL UNIT								
	04	05	08	09	11	13	15	16	TOTAL
058	0	0	2	59	0	0	0	0	61
060	0	1	0	29	2	0	0	0	32
061	0	0	34	50	0	7	0	0	91
062	0	3	4	56	0	8	0	0	71
063	0	0	17	79	0	9	0	5	110
064	0	0	4	37	0	40	0	0	81
065	0	0	22	43	0	3	0	0	68
066	0	0	0	34	0	0	0	0	34
TOTAL	273	9	339	3312	242	280	72	5	4532

Table 16. Distribution of Recovered Ceramics by Excavation Unit and Block Analytical Unit in Block D.

UNIT	BLOCK ANALYTICAL UNIT										
	03	04	07	08	09	10	12	13	14	17	TOTAL
001	0	2	16	0	50	0	0	0	0	0	68
002	0	0	0	0	3	7	0	1	0	0	11
003	0	0	0	0	5	0	0	7	0	0	12
004	0	0	0	0	74	34	0	21	0	0	129
005	0	0	0	2	13	48	0	0	0	0	63
006	0	0	0	73	2	19	10	41	0	0	145
007	0	0	0	2	402	14	39	54	0	0	511
008	0	0	0	0	4	0	0	3	0	0	7
009	0	0	0	0	0	6	0	3	0	0	9
010	0	3	0	0	24	2	0	0	0	0	29
011	0	0	0	0	1	0	0	0	0	0	1
012	0	0	0	17	98	0	0	2	0	0	117
013	0	0	0	0	63	7	0	3	0	0	73
014	0	0	0	0	1	15	0	5	1	0	22
015	0	0	0	30	0	4	0	0	0	0	34
016	0	0	0	1	19	2	3	1	0	0	26
018	1	0	0	78	31	96	0	32	0	0	238
019	2	0	0	71	0	86	0	0	0	0	159
020	0	0	0	2	44	38	0	21	0	0	105
021	0	0	0	0	34	14	0	0	0	0	48
022	0	0	0	0	3	12	0	0	0	0	15
023	0	0	0	9	1	2	14	0	0	0	26
024	0	0	0	0	28	5	0	10	0	0	43
025	0	0	0	0	5	0	0	0	0	0	5
026	0	0	0	0	21	0	0	0	0	0	21
027	0	0	0	2	42	19	0	0	0	0	63
028	0	0	0	6	0	29	0	0	0	7	42
029	0	0	0	0	1	13	0	9	0	0	23
031	0	0	0	42	8	0	0	0	0	0	50
032	0	0	0	29	86	37	0	0	0	0	152
033	0	0	0	0	25	13	0	0	0	0	38
TOTAL	3	5	16	366	1125	564	66	218	1	7	2371

Table 17. Distribution of Recovered Ceramics by Excavation Unit and Block Analytical Unit in Block E.

UNIT	BLOCK ANALYTICAL UNIT							
	07	08	09	10	12	13	18	TOTAL
001	0	0	61	7	2	0	0	70
002	0	0	25	0	9	0	0	34
003	0	0	122	0	30	0	0	152
004	0	0	17	0	0	0	0	17
005	0	0	32	0	16	0	0	48
006	0	0	1	0	0	0	0	1
007	15	0	7	0	0	0	0	22
008	0	2	6	0	0	0	2	10
009	0	0	10	0	1	0	0	11
010	4	0	5	0	0	0	0	9
013	0	0	123	0	8	0	0	131
014	0	6	257	0	0	36	0	299
015	0	3	61	0	0	1	0	65
016	0	0	44	0	0	8	0	52
017	0	0	54	0	0	0	0	54
018	0	0	0	0	3	0	0	3
021	0	0	26	0	2	1	0	29
023	0	0	43	0	0	0	0	43
024	1	0	19	0	2	0	0	22
027A	0	0	59	0	23	0	0	82
027B	0	0	249	0	8	0	-0	257
027C	0	0	182	0	5	0	0	187
027D	0	4	0	5	0	12	0	21
028	0	0	27	0	3	0	0	30
029	0	0	3	0	6	0	0	9
030	0	2	11	0	0	7	0	20
031	0	10	5	0	0	8	0	23
032	0	12	0	0	4	5	0	21
033	0	0	6	0	3	4	0	13
034	0	0	0	0	7	1	0	8
036	0	7	5	0	0	0	0	12
041	0	0	0	0	1	0	0	1
043	0	22	12	0	3	4	0	41
044	0	0	38	0	0	0	0	38
045	0	0	43	0	0	0	0	43
046	0	0	52	0	0	0	0	52
048	0	3	30	0	4	5	0	42
049	0	1	19	0	4	1	0	25
050	0	16	6	0	0	3	0	25
051	0	1	3	0	7	1	0	12
052	0	0	13	0	5	0	0	18
053	0	3	48	0	0	3	0	54
054	0	0	72	0	12	2	0	86
055	0	16	46	0	0	11	0	73
056	0	2	39	0	0	0	0	41
058	0	0	25	0	11	9	0	45
059	0	11	266	0	0	0	0	277
060	0	10	31	0	0	3	0	44
TOTAL	20	131	2203	12	179	125	2	2672

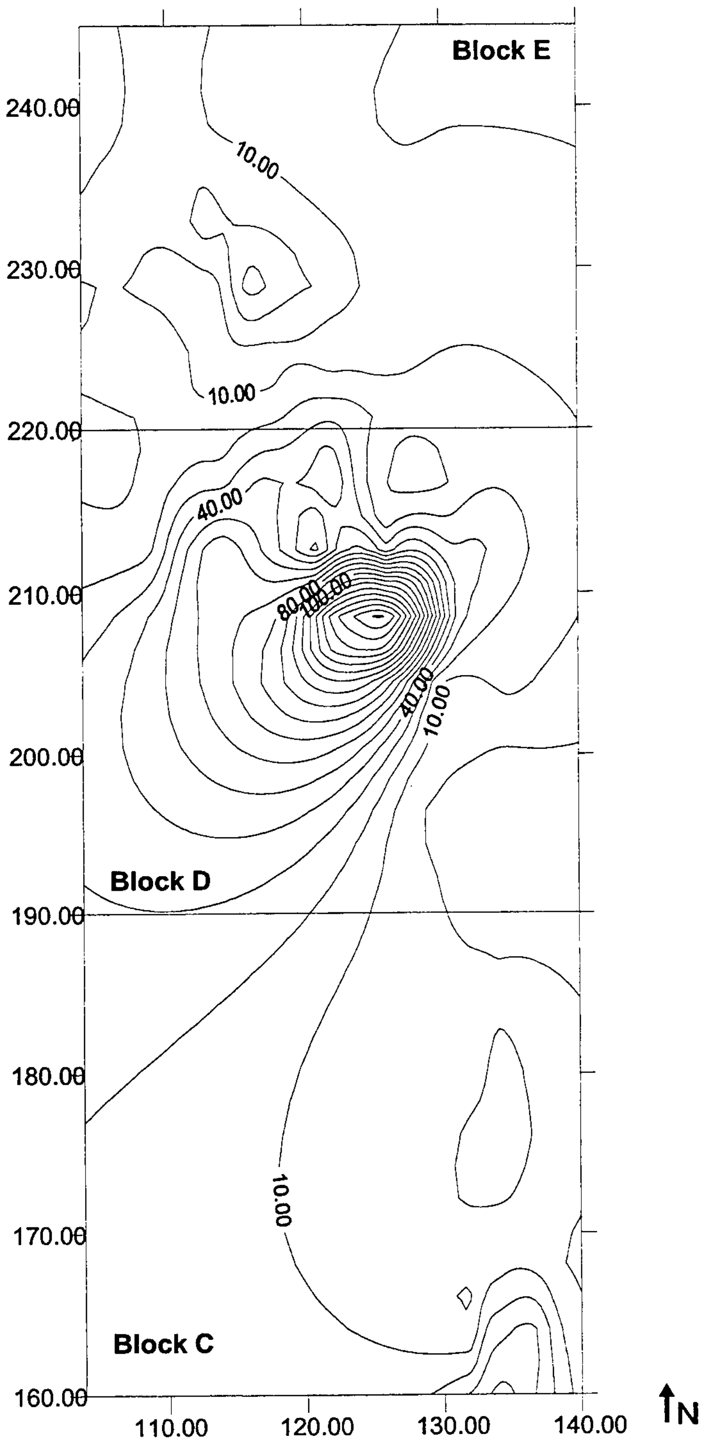


Figure 135. Distribution of ceramics during the Early period in Blocks C, D, and E.

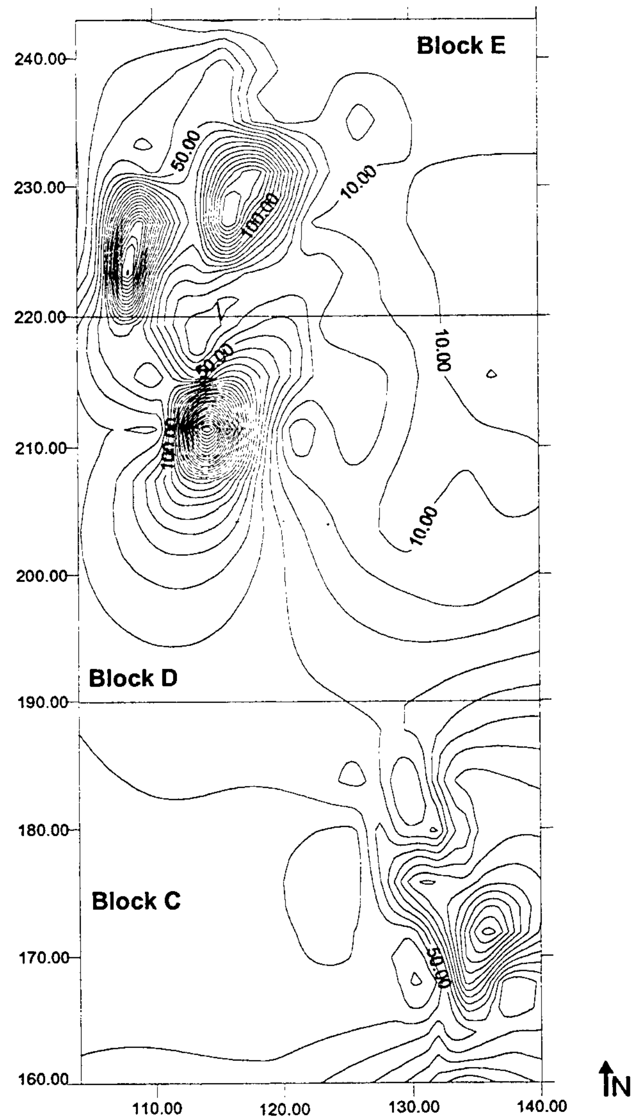


Figure 136. Distribution of ceramics during the Late period in Blocks C, D, and E.

Ceramic Types

The ceramic assemblage recovered during excavation at Nina Plantation included a range of nineteenth century types (Table 18 and Chart 2). The most common type was whiteware, comprising 69.65 percent (n=7455) of the entire assemblage. This was followed in frequency by soft paste porcelain (9.16 percent, n=981), and by yellowware (6.25 percent, n=669). Other ceramic types represented were pearlware (5.7 percent, n=610), stoneware (3.58 percent, n=383), ironstone (2.91 percent, n=312), various coarse earthenwares and redwares (1.78 percent, n=191), tin-glazed wares (0.69 percent, n=74), porcelaneous stoneware (0.22 percent, n=24), and creamware (0.05 percent, n=5).

The corresponding frequencies and percentages of ceramics recovered from each of the excavation blocks are shown in Tables 19, 20, 21, and 22. The frequencies also are represented in Charts 3, 4, 5, and 6. While whiteware maintained dominance in all of the excavation blocks, it accounted for 79.11 percent (n=3678) of the ceramics from Block C, compared to only 62.12 percent (n=1648) in Block D, and 65.68 percent (n=1782) in Block E. There also was a discrepancy in the percentage of pearlware and porcelain represented in the subassemblages from each block. In Block D, the location of the core of the main house, pearlware (8.78 percent, n=233), and porcelain (13.72 percent, n=364) occupied a far larger proportion of the subassemblage than they did in Block C, where they represented only 1.79 percent (n=83), and 6.58 percent (n=306), respectively, of the total subassemblage. Block F, which may have included debris from an early episode of dumping by the occupants of the main house, showed the highest percentage of pearl-

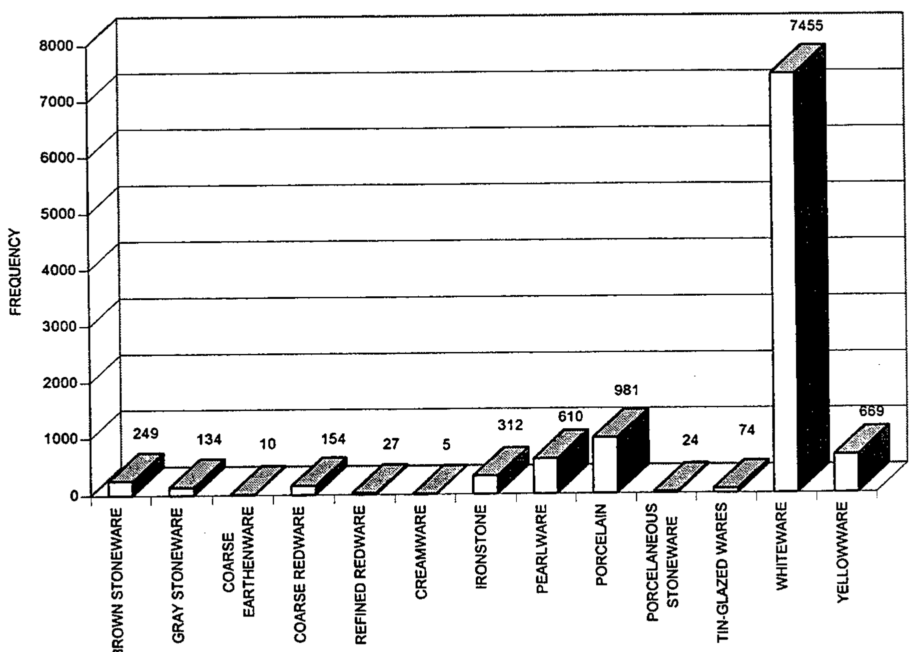


Chart 2. Ceramic frequencies by type in Blocks C, D, E, and F.

Table 18. Ceramic Frequencies and Percentages in Blocks C, D, E, and F.

STONEWARE	BROWN STONEWARE	FREQUENCY PERCENTAGE	249 2.33%
	GRAY STONEWARE	FREQUENCY PERCENTAGE	134 1.25%
REDWARE/EARTHENWARE	COARSE EARTHENWARE	FREQUENCY PERCENTAGE	10 0.09%
	COARSE REDWARE	FREQUENCY PERCENTAGE	154 1.44%
	REFINED REDWARE	FREQUENCY PERCENTAGE	27 0.25%
CREAMWARE	CREAMWARE	FREQUENCY PERCENTAGE	5 0.05%
IRONSTONE	IRONSTONE	FREQUENCY PERCENTAGE	312 2.91%
PEARLWARE	PEARLWARE	FREQUENCY PERCENTAGE	610 5.70%
PORCELAIN	PORCELAIN	FREQUENCY PERCENTAGE	981 9.16%
PORCELANEOUS STONEWARE	PORCELANEOUS STONEWARE	FREQUENCY PERCENTAGE	24 0.22%
TIN-GLAZED WARES	TIN-GLAZED WARES	FREQUENCY PERCENTAGE	74 0.69%
WHITEWARE	WHITEWARE	FREQUENCY PERCENTAGE	7455 69.65%
YELLOWWARE	YELLOWWARE	FREQUENCY PERCENTAGE	669 6.25%
TOTAL CERAMIC COUNT, ALL AREAS			**10704**
TOTAL PERCENTAGE			**100.00%**

Table 19. Ceramic Frequencies and Percentages in Block C.

STONEWARE	BROWN STONEWARE	FREQUENCY PERCENTAGE	99 2.13%
	GRAY STONEWARE	FREQUENCY PERCENTAGE	65 1.40%
REDWARE/EARTHENWARE	COARSE EARTHENWARE	FREQUENCY PERCENTAGE	6 0.13%
	COARSE REDWARE	FREQUENCY PERCENTAGE	62 1.33%
	REFINED REDWARE	FREQUENCY PERCENTAGE	9 0.19%
IRONSTONE	IRONSTONE	FREQUENCY PERCENTAGE	83 1.79%
PEARLWARE	PEARLWARE	FREQUENCY PERCENTAGE	83 1.79%
PORCELAIN	PORCELAIN	FREQUENCY PERCENTAGE	306 6.58%
TIN-GLAZED WARES	TIN-GLAZED WARES	FREQUENCY PERCENTAGE	34 0.73%
WHITEWARE	WHITEWARE	FREQUENCY PERCENTAGE	3678 79.11%
YELLOWWARE	YELLOWWARE	FREQUENCY PERCENTAGE	224 4.82%
TOTAL CERAMIC COUNT FROM BLOCK C			**4649**
TOTAL PERCENTAGE			**100.00%**

Table 20. Ceramic Frequencies and Percentages in Block D.

STONEWARE	BROWN STONEWARE	FREQUENCY	47
		PERCENTAGE	1.77%
	GRAY STONEWARE	FREQUENCY	36
		PERCENTAGE	1.36%
REDWARE/EARTHENWARE	COARSE EARTHENWARE	FREQUENCY	1
		PERCENTAGE	0.04%
	COARSE REDWARE	FREQUENCY	13
		PERCENTAGE	0.49%
	REFINED REDWARE	FREQUENCY	16
		PERCENTAGE	0.60%
CREAMWARE	CREAMWARE	FREQUENCY	1
		PERCENTAGE	0.04%
IRONSTONE	IRONSTONE	FREQUENCY	139
		PERCENTAGE	5.24%
PEARLWARE	PEARLWARE	FREQUENCY	233
		PERCENTAGE	8.78%
PORCELAIN	PORCELAIN	FREQUENCY	364
		PERCENTAGE	13.72%
PORCELANEOUS STONEWARE	PORCELANEOUS STONEWARE	FREQUENCY	7
		PERCENTAGE	0.26%
TIN-GLAZED WARES	TIN-GLAZED WARES	FREQUENCY	18
		PERCENTAGE	0.68%
WHITEWARE	WHITEWARE	FREQUENCY	1648
		PERCENTAGE	62.12%
YELLOWWARE	YELLOWWARE	FREQUENCY	130
		PERCENTAGE	4.90%
TOTAL CERAMIC COUNT FROM BLOCK D			**2653**
TOTAL PERCENTAGE			**100.00%**

Table 21. Ceramic Frequencies and Percentages in Block E.

STONEWARE	BROWN STONEWARE	FREQUENCY	100
		PERCENTAGE	3.69%
	GRAY STONEWARE	FREQUENCY	24
		PERCENTAGE	0.88%
REDWARE/EARTHENWARE	COARSE EARTHENWARE	FREQUENCY	1
		PERCENTAGE	0.04%
	COARSE REDWARE	FREQUENCY	50
		PERCENTAGE	1.84%
	REFINED REDWARE	FREQUENCY	2
		PERCENTAGE	0.07%
CREAMWARE	CREAMWARE	FREQUENCY	2
		PERCENTAGE	0.07%
IRONSTONE	IRONSTONE	FREQUENCY	89
		PERCENTAGE	3.28%
PEARLWARE	PEARLWARE	FREQUENCY	43
		PERCENTAGE	1.58%
PORCELAIN	PORCELAIN	FREQUENCY	275
		PERCENTAGE	10.14%
PORCELANEOUS STONEWARE	PORCELANEOUS STONEWARE	FREQUENCY	17
		PERCENTAGE	0.63%
TIN-GLAZED WARES	TIN-GLAZED WARES	FREQUENCY	17
		PERCENTAGE	0.63%
WHITEWARE	WHITEWARE	FREQUENCY	1782
		PERCENTAGE	65.68%
YELLOWWARE	YELLOWWARE	FREQUENCY	311
		PERCENTAGE	11.46%
TOTAL CERAMIC COUNT FROM BLOCK E			**2713**
TOTAL PERCENTAGE			**100.00%**

Table 22. Ceramic Frequencies and Percentages in Block F.

STONEWARE	GRAY STONEWARE	FREQUENCY PERCENTAGE	5 1.86%
REDWARE/EARTHENWARE	COARSE REDWARE	FREQUENCY PERCENTAGE	5 1.86%
PEARLWARE	PEARLWARE	FREQUENCY PERCENTAGE	74 27.51%
PORCELAIN	PORCELAIN	FREQUENCY PERCENTAGE	14 5.20%
TIN-GLAZED WARES	TIN-GLAZED WARES	FREQUENCY PERCENTAGE	3 1.12%
WHITEWARE	WHITEWARE	FREQUENCY PERCENTAGE	165 61.34%
YELLOWWARE	YELLOWWARE	FREQUENCY PERCENTAGE	3 1.12%
TOTAL CERAMIC COUNT FROM BLOCK F			**269**
TOTAL PERCENTAGE			**100.00%**

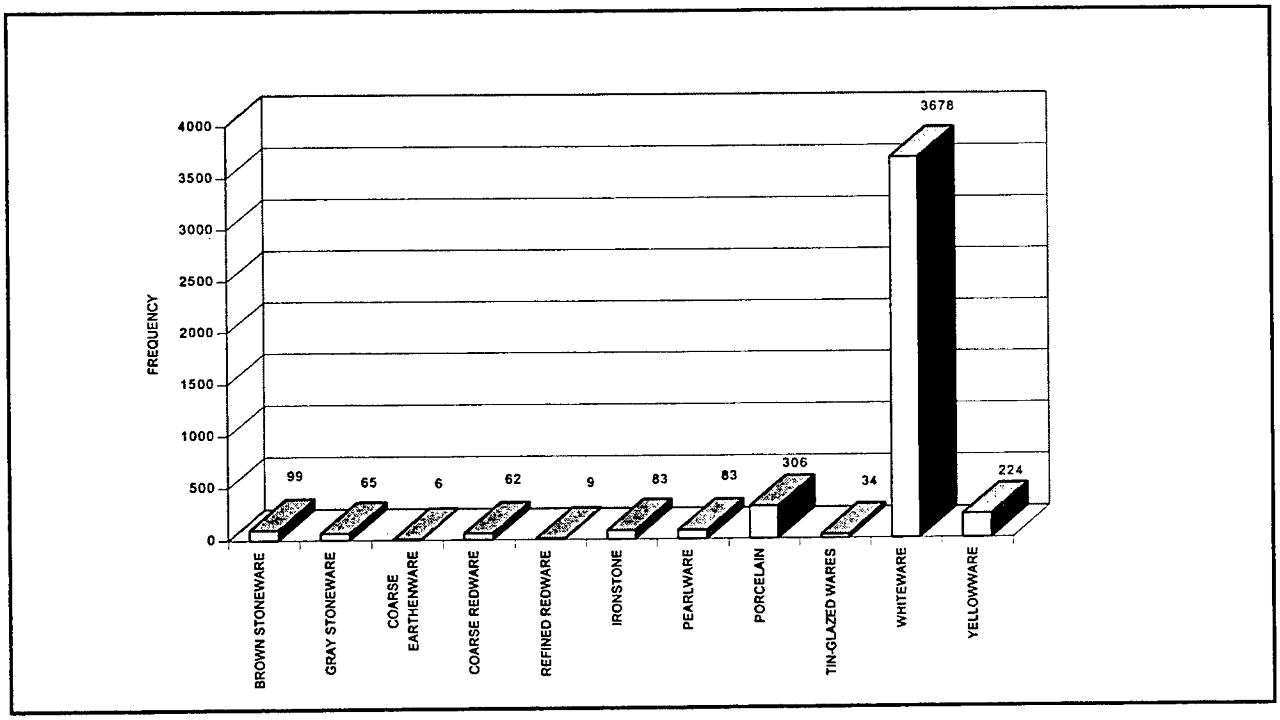


Chart 3. Ceramic frequencies by type in Block C.

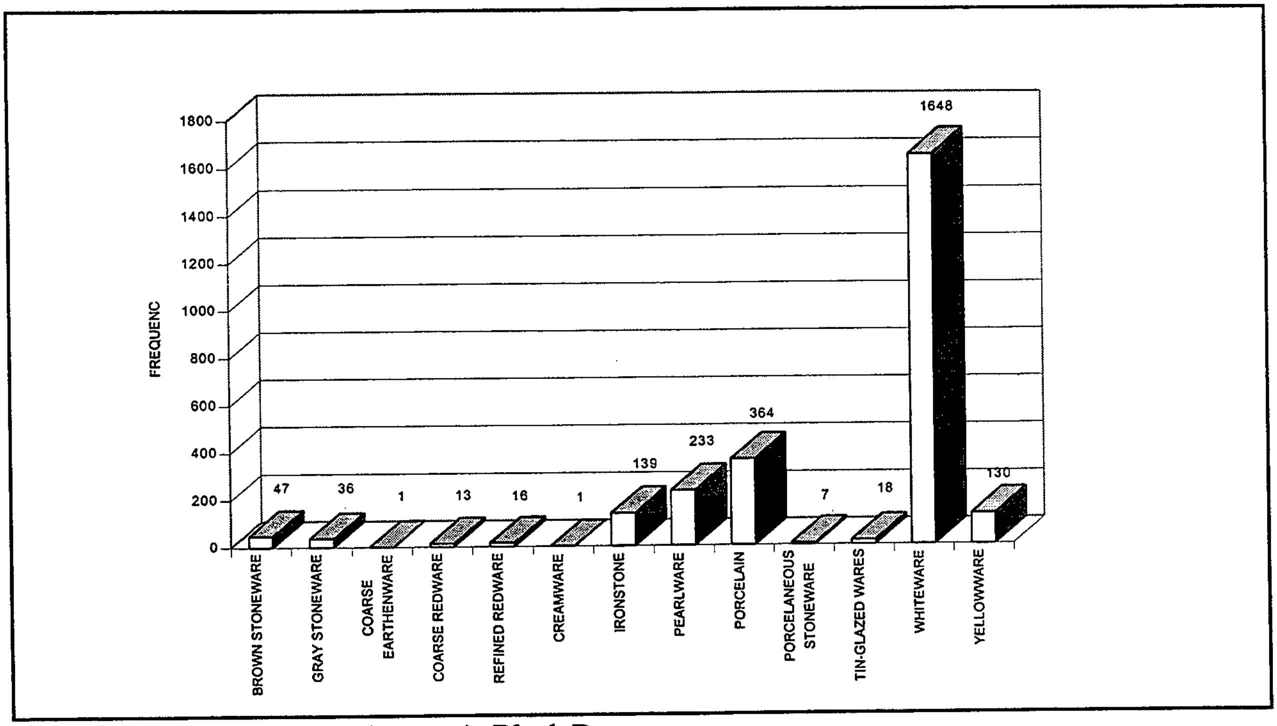


Chart 4. Ceramic frequencies by type in Block D.

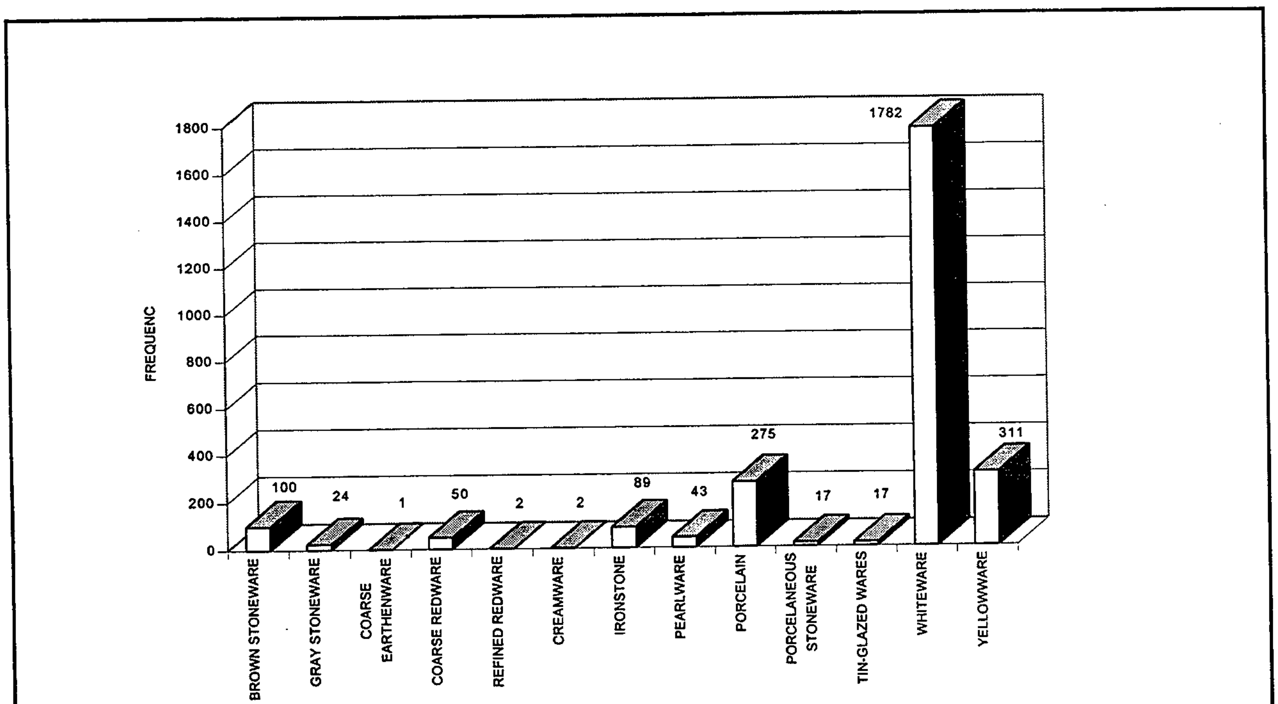


Chart 5. Ceramic frequencies by type in Block E.

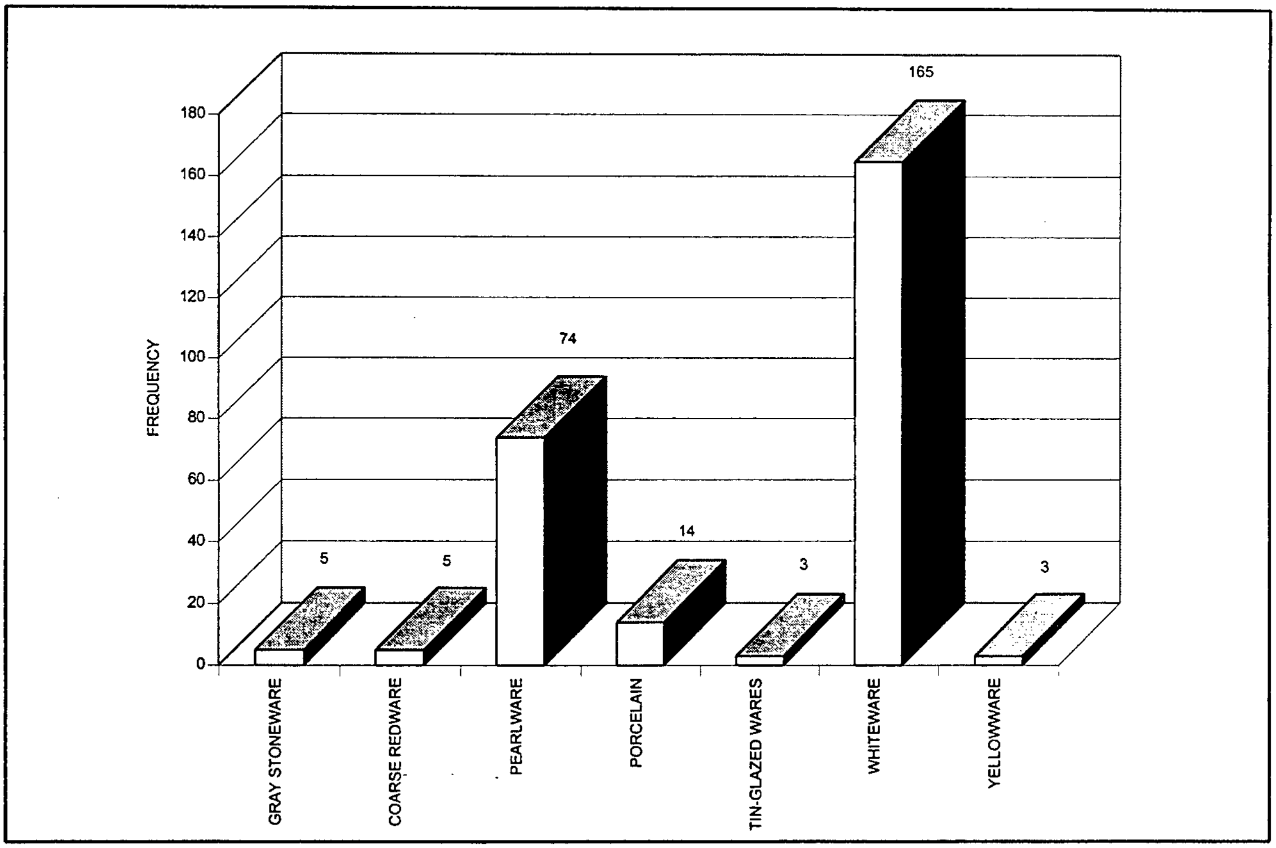


Chart 6. Ceramic frequencies by type in Block F.

ware (27.51 percent, n=74), and the lowest percentage of whiteware (61.34 percent, n=165) of any of the excavated blocks.

A comparison of the percentages of ceramic types recovered from the early (preflood) levels and the later levels in each excavation block suggested a far greater level of variation in the early and late subassemblages in Blocks D and E, than in Block C (Charts 7 - 9). In Block C (Chart 7), percentages of each type change little in each period; proportions of whiteware, porcelain, and yellowware were almost static. In Block D, whiteware decreased slightly, while pearlware decreased dramatically, and porcelain and ironstone increased sharply. A similar pattern was evident in Block E.

Mean Ceramic Dating

The historical record for Nina Plantation provided relatively clear starting and ending dates for occupation (see Chapter IV), and the widespread presence of a layer of alluvium deposited during the dated flood event of 1851 offered a stratigraphic reference point for the middle period of occupation. A relative sequence for construction events, and for the deposition of subsequent domestic debris, was apparent in the clear stratigraphy at the site. In order to clarify this sequence, and to test hypothetical date ranges, two analytical tools were applied to the body of ceramic data from Nina Plantation. One of these was the Mean Ceramic Date formula, first devised for use on historic archeological sites by Stanley South (1977:201-126); the other was a form of archeological seriation, discussed in the following section.

South's Mean Ceramic Date formula was developed as a method for the calculation of the mean date of manufacture for British ceramics from eighteenth century historical sites in North America. It has been modified for use with nineteenth century ceramics (Goodwin and Yakubik 1982), and it has been used in Louisiana with success on sites such as the Elmwood Plantation site (Goodwin et al. 1984). The Mean Ceramic Date formula uses type frequencies, and the me-

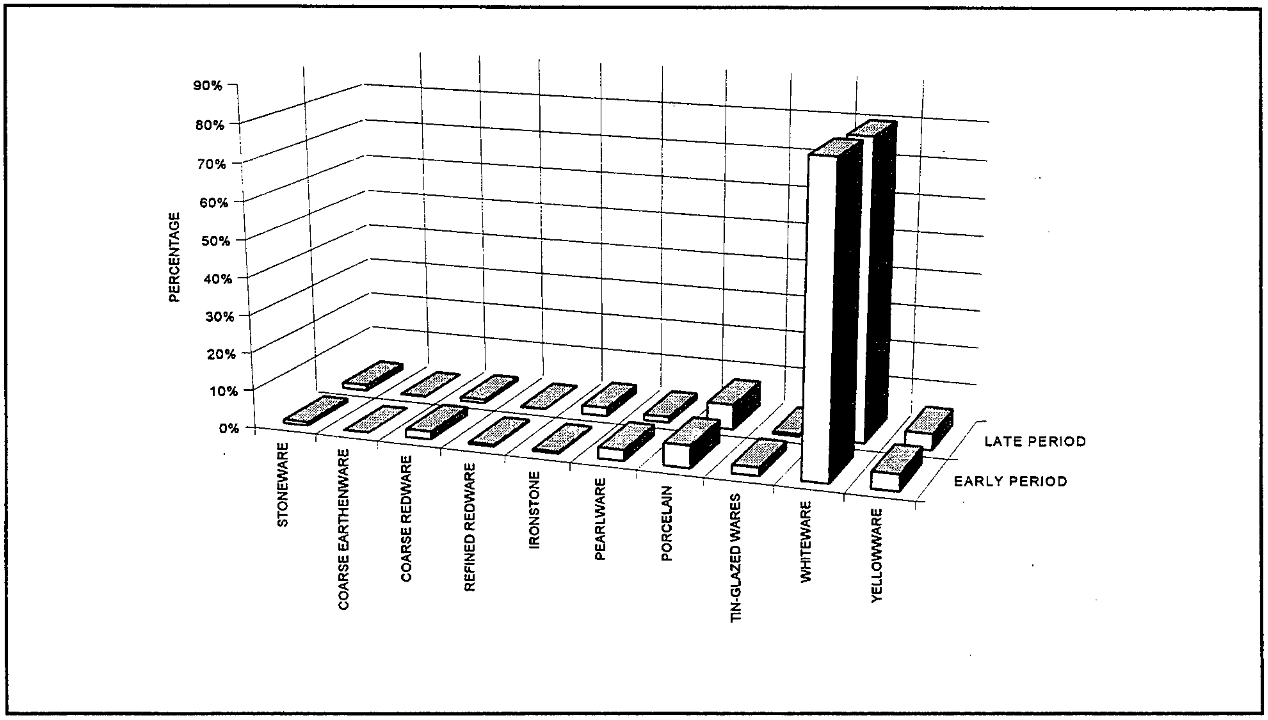


Chart 7. Ceramic types recovered from the Early and Late periods in Block C.

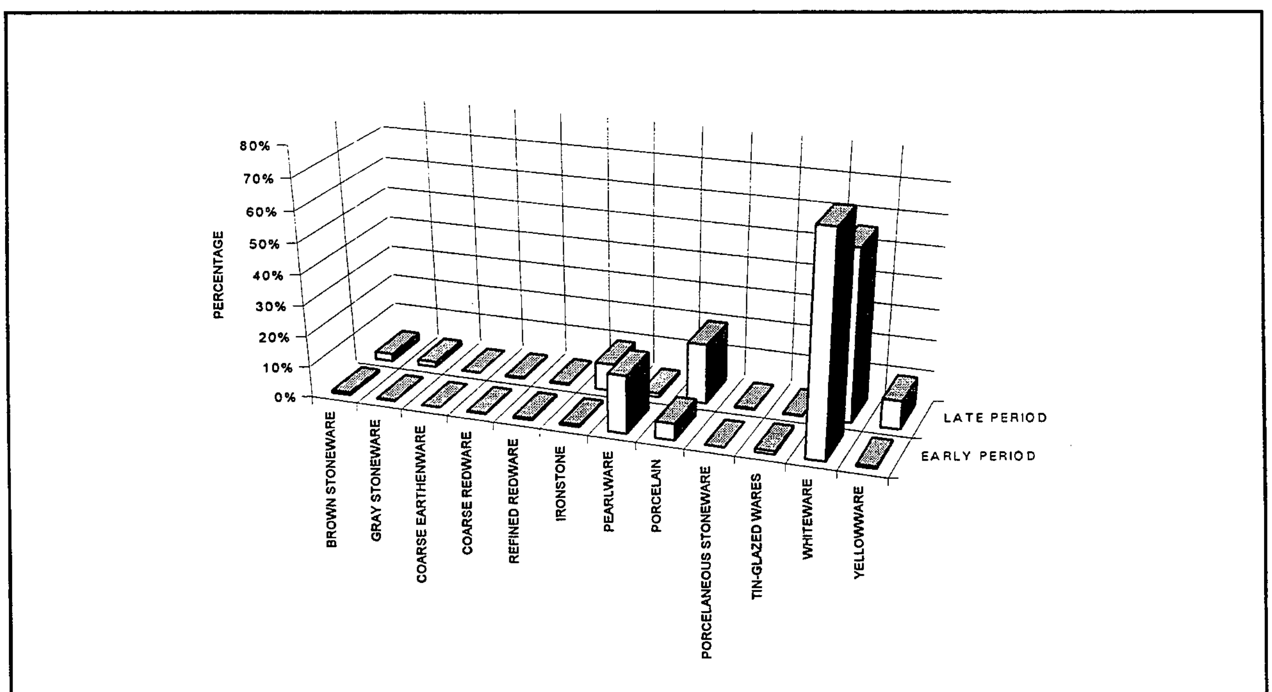


Chart 8. Ceramic types recovered from the Early and Late periods in Block D.

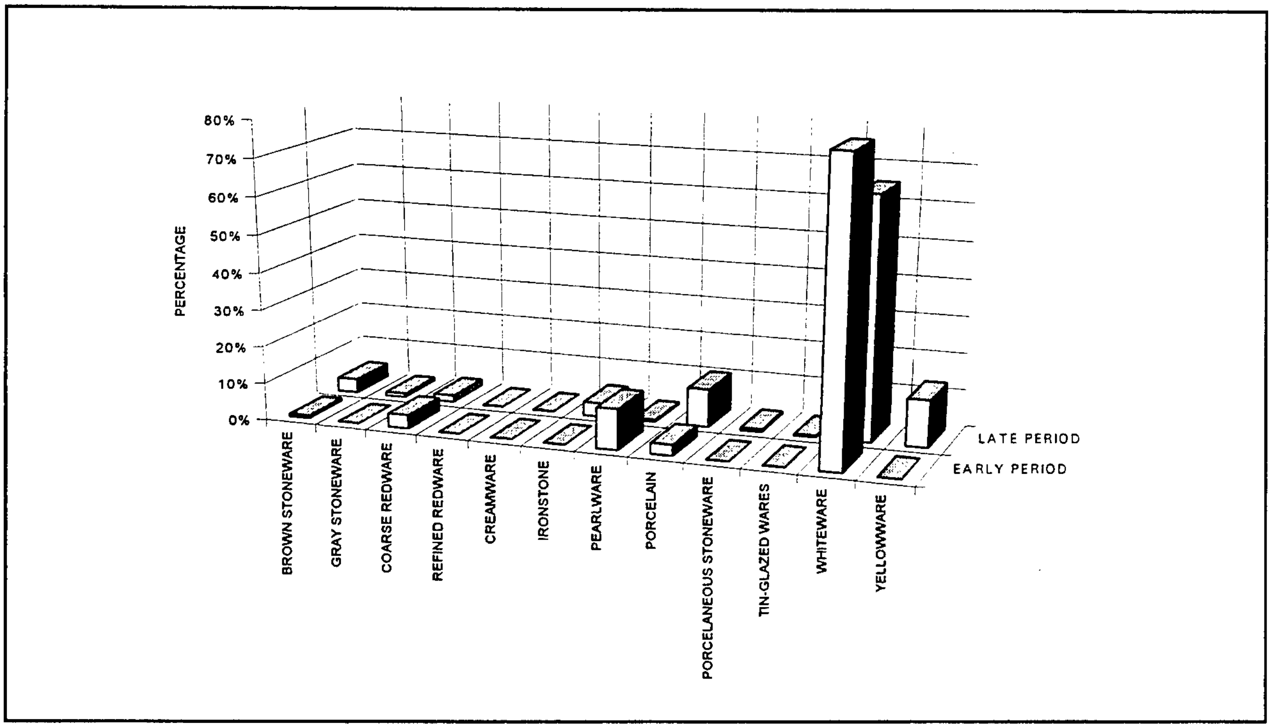


Chart 9. Ceramic types recovered from the Early and Late Periods in Block E.

dian of their manufacture date range, to calculate a mean date of occupation for a site, assuming a normal, unimodal distribution for each ceramic type. The mean ceramic date (Y) for a given ceramic assemblage is expressed as:

$$(Y) = \frac{\sum_{i+i}^{n} xi \bullet fi}{\sum_{i=i}^{n} fi}$$

where xi = the median date for the manufacture of each ceramic type, fi = the frequency of each ceramic type, and n = the number of ceramic types in the sample. The formula has been used most frequently on entire site assemblages, and it works best on single component, continuously occupied sites. In some cases, such as Elmwood Plantation, the formula has been used successfully to provide dates for subassemblages from individual, stratified proveniences (Goodwin et al. 1984:189-190).

While the utility of the Mean Ceramic Date formula for determining a general median occupation date for a site has been demonstrated in numerous cases, its reliability weakens when it is used on sites with multiple cultural components, on sites where ceramic re-use is common, where heirloom pieces form a significant part of the assemblage, or where economic conditions adversely affect acquisition patterns. According to Steponaitis and Kintigh (1993), who employed similar methods to calculate site occupation dates, these dating methods "should be applied only to assemblages that can reasonably be assumed to represent single, continuous occupations. Multicomponent sites or assemblages will generally yield erroneous estimates" (Steponaitis and Kintigh 1993:360). The formula also requires precise, short-duration use dates for the majority of ceramics. Most date ranges used for nineteenth century ceramics have been ranges of manufacture dates, rather than use dates, which can vary widely by region, economic group, and time period. In the case of many nineteenth century porcelains, whitewares, and yellowwares, even a precise manufacture date is difficult to provide;

many of these types have manufacture date ranges that span the nineteenth century.

Given these factors, the application of the Mean Ceramic Date formula to the data from Nina Plantation was not expected to yield ideal results. While the overall mean date for the site was within the expected range, the formula was unable to provide accurate mean dates for any of the substantially shorter temporal periods. The fact that the occupation of the site spanned the nineteenth century, as did the majority of the ceramic types, may explain the correspondence of the mean ceramic date to the actual mid-point of occupation.

The mean date for the entire site was calculated at 1855.88 (n=9177, standard deviation = 15.89). Using the well documented end date of 1890, the mean date for the site would place the earliest date of occupation in 1821.76, which certainly is within the presumed historical range of 1820 - 1825. The overall calculated mean occupation dates for the excavation blocks were 1854 (n=2456, standard deviation = 16.05) for Block D, 1857.2 (n=2588, standard deviation = 16.26) for Block E, and 1856 (n=4133, standard deviation = 13.93) for Block C. Using the end date of 1890, these mean dates would indicate the earliest occupation at the site in Block D (1818), first occupation of Block C in 1822, and occupation of Block E in 1824. Blocks D and E both were associated with the main house, and evidence of continuous occupation was recovered from both areas. The difference in mean dates possibly reflects the construction in Block E of the north wing during the second half of the nineteenth century, and the later nineteenth century ceramic assemblage associated with its use. However, stratigraphic evidence clearly placed the construction of the north wing after the 1851 flood (see Chapter VIII), a fact that is not reflected in the calculated mean date for Block E.

When the formula was applied to ceramic subassemblages corresponding to early (antebellum) and late (largely postbellum) temporal periods at the site, the results exhibited even less conformity with the historical and stratigraphic records. The mean date for the early period ceramic assemblage was 1851.23 (n=1392, standard deviation = 13.83), while the late period mean date was 1856.94 (n=7193, standard deviation = 16.2). Note that the total numbers of sherds included in these calculations differed from those used in block calculations, because some temporal periods, such as that of the flood, were not included in either the early or the late periods. In Block C, the early period had a mean date of 1856.73 (n=338, standard deviation = 14.27), and the late period's mean date was almost identical at 1856.74 (n=3234, standard deviation = 13.76). The identical mean dates and low standard deviations in Block C may be a reflection of a similar ceramic assemblage throughout the occupation span of the Outbuilding complex (see Chart 7).

Because the Main House complex was in both Blocks D and E, the data from these blocks were combined. The early period (antebellum) returned a mean date of 1851 (n=1037, standard deviation = 15.02), while the late period (largely postbellum) was dated at 1860.3 (n=3249, standard deviation = 17.03). While the proper sequential relationship is illustrated by these mean dates, they still do not correspond precisely with dates suggested by the larger body of site data. If a final date of 1890 were accepted as the end of the late period (site destruction), that would imply a beginning to the late period, represented by the flood deposition, in 1830. But if this were chronologically correct, then the mean date returned for the early period (1851) would clearly be incorrect.

Although the mean dates calculated using this method did not reflect actual occupation periods, they did offer some qualitative information about the ceramic subassemblages from Nina Plantation. The mean dates for Blocks C, D, and E appeared to reflect the relative order of the construction sequence at the site, with the core of the main house in Block D producing the earliest date, and the north wing in Block E returning the most recent mean date. Additionally, the unchanged mean date for both early and late occupations in Block C, as well as the low standard deviation of the mean dates of ceramic types in this block, suggested a smaller variety of types with less temporal variation. This may be a reflection of the lower economic status of the residents of the Outbuilding complex, in contrast to the wealthier occupants of the Main House complex, who were able to purchase a greater variety of more popular ceramic types.

It is clear from these calculations that the Mean Ceramic Date formula is a less than ideal

chronological tool when applied to multicomponent sites like Nina Plantation. While the overall mean date returned from these calculations corresponded nicely with the estimate based on historical data, this may have resulted from the fact that the manufacturing dates for the majority of the recovered ceramics spanned the nineteenth century. As expected, the historical and stratigraphic data from Nina Plantation were able to provide a more reliable and finer scaled chronology of site occupation than application of the Mean Ceramic Formula.

Seriation

In addition to the Mean Ceramic Date formula, another chronological tool applied to the ceramic data from Nina Plantation was seriation. In this method, relative frequencies of the major ceramic types from the excavated levels are arranged to produce a relative chronological sequence. The arrangement assumes a gradual rise, and then a decline in popularity for each ceramic type; the ideal popularity curve is "battleship-shaped," with the highest frequency at the height of the type's popularity (Ford 1962; Goodwin et al. 1984).

The seriation graph (Chart 10) then was compared to the chronological sequence suggested for the site by stratification, the direct historical approach, and by the known *terminus post quem* (*tpq*), i.e., the 1851 flood event (Chart 2). The results of this comparison indicated that the chronological sequence corroborated the relative chronology suggested by seriation. The most common ceramic type was whiteware, which remained constant throughout the occupation span of the site. This temporal persistence was not exhibited by any of the other types, which exhibited statistically normal changes in popularity and use through time.

Economic Scaling

Economic scaling is being used with increasing frequency with eighteenth and nineteenth century historical data as an analytical tool that may aid in the determination of the relative social or economic status of an historical site's occupants. Relying on the late eighteenth and nineteenth century practice of price-fixing among potters in the English ceramic industry, economic scaling employs a "cc index," or compilation of types and prices recognized by the English pottery industry (Miller 1980). "CC ware" was the industry's term for white-bodied, refined earthenwares, including such wares as creamware, pearlware, and whiteware (Miller 1991:1). Through examination of wholesale price lists, price fixing lists, bills of lading, account books, and invoice statements, lists of index values for these different types of decorated ceramics have been developed (Miller 1980, 1991). During economic scaling analysis, a CC index value is calculated for a ceramic assemblages. The index value does not correspond to a fixed status level; there, it is a relative value that must be related to values from other sites and assemblages in the region. The use of this analytical tool allows "sites to be scaled in terms of their expenditure on ceramics" (Miller 1980:51), thereby determining the relative economic class of those purchasing the ceramics.

Economic scaling was conducted for vessels identified during minimum vessel analysis. An index value was assigned to each vessel, based on its specific ware type, decorative treatment, form, and size; next, the values were averaged for each vessel form. The resulting ceramic index values then could be compared; in general, higher index values corresponded to higher purchase prices. Miller's index is based primarily on decorative type and form, rather than on ware type. According to Miller, the classification of nineteenth century British ceramic assemblages by ware type provides only chronological information; however, classification of nineteenth century British-made ceramics by decorative treatment combines historical and archeological data, and provides consistency in identification and classification (Miller 1980:51).

During assignment of values, the 1859 index was used when possible (Miller 1991). This provided a date as close as possible to the mean occupation date of the site. If an index value for a specific ceramic type was not available for 1859, the next closest year index value was used. The ceramic index value for any dish in the collection less then 10 inches in diameter was calculated at the 10 inch size. All plates in the collection had their index values calculated at the 9 to 10 inch size, while saucers were defined as plates between 5 to 7 inches in size. Any saucer with a

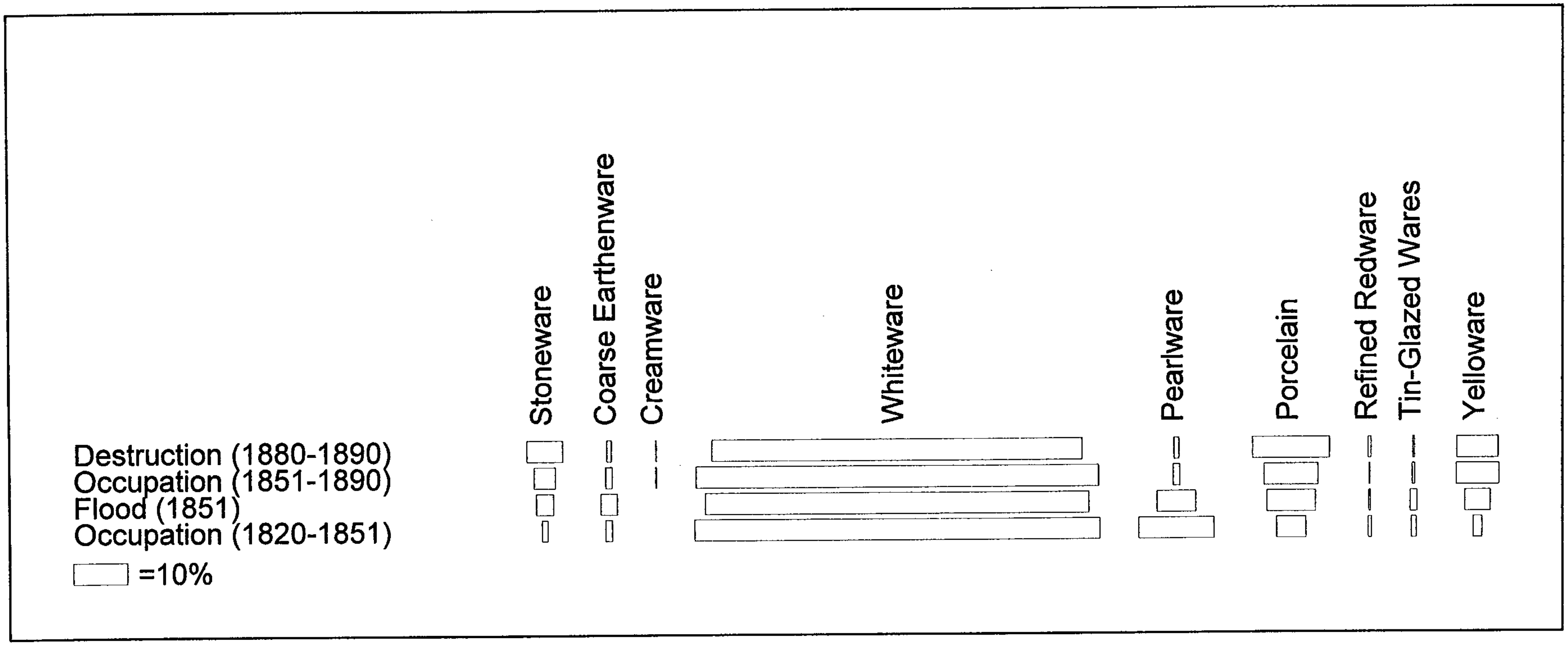


Chart 10. Ceramic seriation in Blocks C, D, E, and F.

diameter of less than 5 inches was calculated at the 5 inch size. Based on Miller's assertion that most cups at American sites were of "London" size, and that "edged, fluted, and handled teas are not very common in American assemblages" (Miller 1991:15), all cups in the Nina Plantation ceramic vessel subassemblage were classified as handle-less, simple, "London" size cups. Size was not listed as a classificatory attribute for bowls (Miller 1991); values were assigned based solely on decorative type. During vessel analysis, however, bowls were categorized as either large or small. Large bowls were defined as those with a diameter exceeding 12 inches. Because no distinction was made in the CC index, the division based on bowl size did not affect the assigned ceramic index value. Saucers were defined as small, shallow bowls, rather than as teaware; nineteenth century tea services did not include the vessel currently defined as a saucer. Any ceramic types or forms that were not included in Miller's (1980, 1991) lists of ceramic index values were excluded from the analysis.

Ceramic values were calculated for the site as a whole, and for the individual excavation blocks, corresponding to the Main House complex and the Outbuilding complex. The calculated mean of the ceramic index values for the entire subassemblage of ceramic vessels was 1.55 (n=954). The highest average CC index value at the site was assigned to cups (2.02, n=52), while the lowest value was for plates (1.23, n=203). There was a marked difference in the averaged CC index values calculated for large and small bowls recovered from the site. While small bowls comprised a majority (n = 339) of those that were assigned index values, large bowls (n = 42) had a higher index value (1.65 for large bowls and 1.41 for small bowls). The average index value for dishes (1.62, n=281) was similar to that calculated for large bowls. The average ceramic index value for saucers was 1.44 (n=37), placing them on a scale between dishes and plates (Table 23).

Division of the ceramic collection into excavation blocks permitted spatial comparison of ceramic index means. The mean ceramic index value for Block C, associated with the Outbuilding complex, was 1.43 (n=484). Cups had the highest index value (1.75, n=18), and there was the noted disparity between the calculated index value for large and small bowls. Large bowls (n = 13) had an index value of 1.68, while small bowls (n = 182) had an index value of only 1.37. Dishes had an average index value of 1.45 (n=163), saucers had a value of 1.42 (n=18), and plates had the lowest index value at 1.13 (n=90) (Table 23).

The mean ceramic index value for ceramic vessels from Block D, representing part of the central core and the south wing of the main house was 1.75 (n=253). Again, cups had the highest CC index value (2.17, n=20), significantly higher than those recovered from Block C. Large bowls had an index value of 1.87 (n=12), and small bowls had an index value of 1.48 (n=76). Plates again had the lowest calculated index value, but at 1.45 (n=44), this valve was higher than that

Table 23. Comparative Ceramic Index Values for Ceramics Recovered from Nina, Ashland-Belle Helene, and Beka Plantations.

SITE	INDEX DATE	NUMBER OF VESSELS	CUPS	SAUCERS	PLATES	DISHES	BOWLS	MEAN
Ashland-Belle Helene Plantation, Cabin 1	1866	195	2.41	1.74	1.65	N/A	1.53	1.79
Ashland-Belle Helene Plantation, Cabin 2	1866	190	2.39	2.00	1.60	N/A	1.50	1.77
Beka Plantation, Cabin	1866	58	1.98	1.57	1.68	N/A	1.51	1.66
Nina Plantation, Phase II, Quarters	1859	162	2.40	1.80	1.58	N/A	1.29	1.56
Nina Plantation, Phase II, Area 1	1859	77	2.17	1.50	1.30	N/A	1.45	1.49
Nina Plantation, Data Recovery, Block C, Outbuildings	1859	484	1.75	1.42	1.13	1.45	1.39	1.43
Nina Plantation, Data Recovery, Blocks D and E, Main House	1859	470	2.07	1.45	1.28	1.82	1.54	1.63
Nina Plantation, Data Recovery, Blocks C, D, and E	1859	954	2.02	1.44	1.23	1.62	1.43	1.55

assigned to plates recovered from Block C. Dishes were valued at 1.93 (n=90), and saucers had a calculated value of 1.62 (n=11). Both of these index values are higher than the corresponding values calculated for Block C. Overall, the ceramic index values calculated for ceramic vessels recovered from Block D, associated with the main house, were higher than those assigned to vessels from Block C, which were associated with the outbuildings.

The mean ceramic index value calculated for Block E, comprising material from the north wing of the main house, was 1.48 (n=217). This was lower than the mean values for either Block D or Block C. Cups were relatively highly valued at 2.08 (n=14). The difference in index values for large and small bowls was not as marked as in the other blocks; large bowls had an index value of 1.46 (n=17), while the index value for small bowls was 1.41 (n=81). Dishes had a ceramic index value of 1.56 (n=28), and the value for plates was 1.18 (n=69). While these values were lower than those calculated for corresponding forms recovered from Block D, they were slightly higher than those calculated for dishes and plates recovered from Block C. The ceramic index value for saucers, at 1.17 (n=8), was significantly lower than the index values for saucers recovered from either Block C or Block D.

In order to compare accurately the Main House complex and the Outbuilding complex, the index values for Blocks D and E were combined to reflect values from the entire Main House complex. The combined mean ceramic value for Blocks D and E was 1.63 (n=470). Cups maintained the highest index value (2.07, n=34), while plates had the lowest calculated value (1.28, n=113). Dishes had an average index value of 1.82 (n=118), and saucers had an average value of 1.45 (n=19). All the average index values for the ceramic vessels recovered from the Main House complex (Blocks D and E) were higher than those calculated for the Outbuilding complex (Block C), with the exception of large bowls. The average index value for large bowls recovered from Block C was 1.68 (n=13), while the value assigned to large bowls recovered from Blocks D and E was 1.63 (n=29).

Table 23 depicts the results of the Phase III Nina Plantation ceramic scaling analysis, along with comparative data from the Phase II excavations at Nina Plantation (Yakubik 1994), from Beka Plantation (Yakubik and Franks 1992), and from mitigation excavations at Ashland-Belle Helene Plantation (Yakubik et al. 1994). Area 1 of the Phase II excavations at Nina Plantation is associated with Structure 1 of the Outbuilding complex, although it previously had been identified as the area of the "Great House" (Yakubik 1994:430). Index values from 1859 were assigned to vessels recovered during both the Phase II and the data recovery at Nina Plantation, while Beka Plantation and Ashland-Belle Helene Plantation were indexed with figures from 1866. The index values are calibrated, and the difference in dates does not affect comparability (Miller 1980). Large and small bowls were combined on Table 23, since no size distinction had been recognized during analysis at the other sites.

While the overall mean index values calculated for ceramics recovered from the Outbuilding complex during mitigation excavations at Nina Plantation are similar to the values for those vessels recovered from the same area during Phase II investigations (Area 1) (Yakubik 1994), the average values of the individual vessel forms show more discrepancy; in all cases, the values calculated for the mitigation data were lower than those for the Phase II data. This probably was a function of the far smaller number of vessels (e.g., small sample size) included in the Phase II sample (Yakubik 1994:430) (Table 24).

The ceramic vessels recovered during the Phase II investigation of the Nina Plantation Quarters had higher average index values for all vessel forms except bowls (Table 24). Yakubik (1994) calculated an index value of 1.29 (n=63) for the bowls identified in the Quarters area; however, the average index value of bowls from the Outbuilding complex was only 1.39 (n=195), and the average value of bowls from the Main House complex was 1.54 (n=186). Again, this discrepancy may be attributed to the significant difference in the number of vessels recovered during the Phase II investigations of the Quarters (n=162), and to the number of vessels recovered during Phase III data recovery of the outbuildings and main house (n=954). Nevertheless, the mean ceramic index values for the Phase II investigation of the Quarters, and for the Phase III investigations of the areas mentioned above, were roughly equivalent.

Table 24. Comparison of Recovered Ceramic Forms from Nina and Ashland-Belle Helene Plantations.

VESSEL FORM	NINA PHASE III, OUTBUILDINGS		NINA PHASE III, MAIN HOUSE		NINA PHASE II, KITCHEN		NINA PHASE II, QUARTERS		ASHLAND-BELLE HELENE, CABIN 1		ASHLAND-BELLE HELENE, CABIN 2	
	n	%	n	%	n	%	n	%	n	%	n	%
BASIN	1	0.2	0	0	0	0	0	0	0	0	1	0.3
BOTTLE	1	0.2	10	1.3	0	0	5	2.1	5	1.8	3	1.0
BOWLS	264	41.4	206	27.7	29	28.4	82	33.7	75	26.9	71	24.7
CHAMBER POT	5	0.8	18	2.4	0	0	7	2.9	6	2.2	7	2.4
CROCK/JAR	19	3.0	20	2.7	1	1.0	4	1.6	2	0.7	1	0.3
CUP/MUG	24	3.8	68	9.1	13	12.7	23	9.5	53	19.0	54	18.8
DISH/PLATE	269	42.2	307	41.3	44	43.1	88	36.2	77	27.6	101	35.2
JUG	2	0.3	2	0.3	0	0	4	1.6	6	2.2	0	0
LARGE BOWLS	19	3.0	51	6.9	4	3.9	4	1.6	4	1.4	1	0.3
LID	4	0.6	3	0.4	0	0	1	0.4	1	0.4	0	0
PITCHER	2	0.3	0	0	2	2.0	6	2.5	8	2.9	10	3.5
PLATTER	4	0.6	19	2.6	1	1.0	1	0.4	0	0	0	0
SAUCER	22	3.4	36	4.8	8	7.8	18	7.4	41	14.7	37	12.9
TUREEN	2	0.3	4	0.5	0	0	0	0	1	0.4	1	0.3
TOTAL	**638**		**744**		**102**		**243**		**279**		**287**	

The mean index values for ceramic vessels recovered during mitigative excavations at Nina Plantation also were lower than those calculated for Cabins 1 and 2 at Ashland-Belle Helene Plantation (1.79, n=195; 1.77, n=190; and 1.66, n=58) (Table 24). The average for Cabins 1 and 2 at Ashland-Belle Helene Plantation was 1.78 (n=385) (Yakubik 1994), while the ceramic index mean for the vessels identified at Nina Plantation during Phase III data recovery was 1.55 (n=954).

The results of ceramic index analysis suggest a lower economic investment in ceramics at Nina Plantation than at either Ashland-Belle Helene or at Beka Plantation. If the presumed labor status of the occupants at the Ashland-Belle Helene cabins and the Beka Plantation cabin (Yakubik and Francis 1992; Yakubik 1994) is taken into account, the discrepancy between the mean value at the Nina Plantation Main House complex and these slave/labor cabin sites is even more marked (Table 24). The differential in ceramics expenditures may have been affected by the higher prominence of the owners of Ashland-Belle Helene (Yakubik 1994) and Beka (Yakubik and Franks 1992) plantations. They also may have been influenced by a close proximity to market resources. These differences not withstanding, within Nina Plantation, the relationship between the values calculated for the Outbuilding complex and for the Main House complex is more in keeping with expected differences between the two components.

Ceramic Vessel Form

The form of a ceramic vessel is linked to its function, to cooking or consumption practices, and potentially to the social and economic status of its owner. John Otto (1984), in his study of Cannon's Point Plantation in Georgia (Otto 1984), classified the ceramic subassemblages from the slave, planter, and overseer sites by vessel form. He hypothesized a relationship between the status of a site's occupants, and the proportion of hollowwares (bowls, jugs, and jars) versus flatwares (plates and platters) recovered during excavations. At the Cannon's Point Plantation owner's dwelling, more than 80 percent of the recovered vessels were serving flatware (plates, platters, and soup dishes), while bowls comprised only 8 percent of the total. At the Cannon's Point slave site, however, bowls made up 40 percent of the total ceramic subassemblage (Otto 1984:167). Analysis of vessel forms from Nina Plantation was conducted to test this hypothesis; in addition, vessel form data were compared to data from the Phase II excavations at Nina Plantation (Yakubik 1994), and from excavations at Ashland-Belle Helene Plantation (Yakubik et al. 1994).

Chart 11 depicts the relative proportions of the ceramic vessel forms recovered during Phase

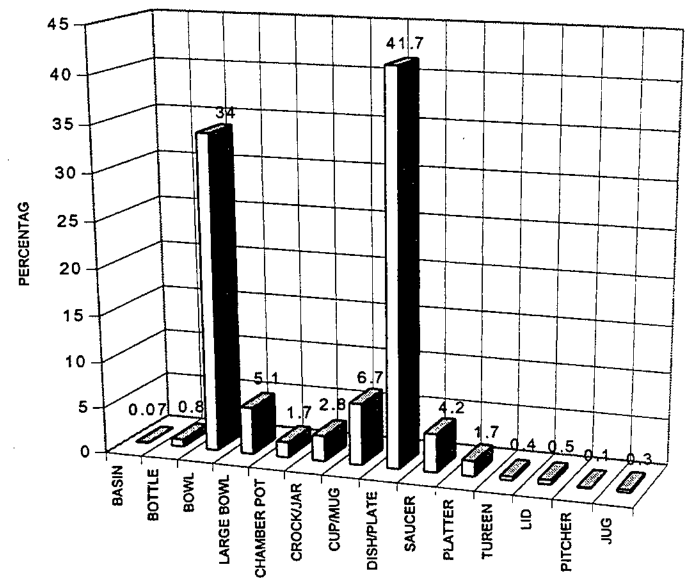


Chart 11. Vessel forms from Blocks C, D, and E.

III data recovery at Nina Plantation. The category dishes/plates constituted 41.7 percent of the total vessel subassemblage, and bowls comprised 34 percent of the subassemblage. Combined, these consumption vessels accounted for 75.7 percent of the total of ceramic vessel subassemblage recovered from Blocks C, D, and E. Cups/mugs and large bowls were the only two remaining vessel types that represented percentages greater than 5 percent (6.7 percent and 5.1 percent, respectively).

Table 24 inventories the ceramic vessel forms recovered from the Nina Plantation Outbuilding complex (Block C), and from the Main House complex (Blocks D and E). Vessel form data from Phase II testing of the kitchen and quarters of Nina Plantation (Yakubik et al. 1994), and from Cabins 1 and 2 at Ashland-Belle Helene Plantation (Yakubik 1994), are shown for comparative purposes. Chart 12 offers a graphic comparison of the proportionate relationships between vessel forms recovered from the Outbuilding complex, the Main House complex, and from the quarters area of Nina Plantation tested by Yakubik et al. (1994).

Arranged chronologically (Table 25), the proportions of the vessel forms recovered from the Outbuilding complex and the Main House complex exhibited some diachronic changes. The percentage of bowls decreased in the late period in both the Outbuilding complex and the Main House complex, though the change was more pronounced in the outbuildings. While dishes/plates increased in relative proportion in the area of the outbuildings during the late period, they maintained consistency at the Main House complex. The proportions of cups also changed during the late period, decreasing at both the Outbuilding complex and the Main House complex.

To determine the statistical significance of the spatial and temporal distributions of these vessel forms, chi-squared tests of independence were conducted on various configurations of the vessel data. The results of these statistical calculations are presented in (Tables 26 through 29). The first test included a variety of vessel forms (bowls, large bowls, plates, platters, saucers, and cups). The probability figure in Table 26 represents the probability that the differences in the proportions of the vessel forms are due to chance or sampling. The result ($p=0.0000000003171$) indicates a very high probability that the observed distribution of these vessel forms is statistically significant, rather than random. Tables 27 - 28

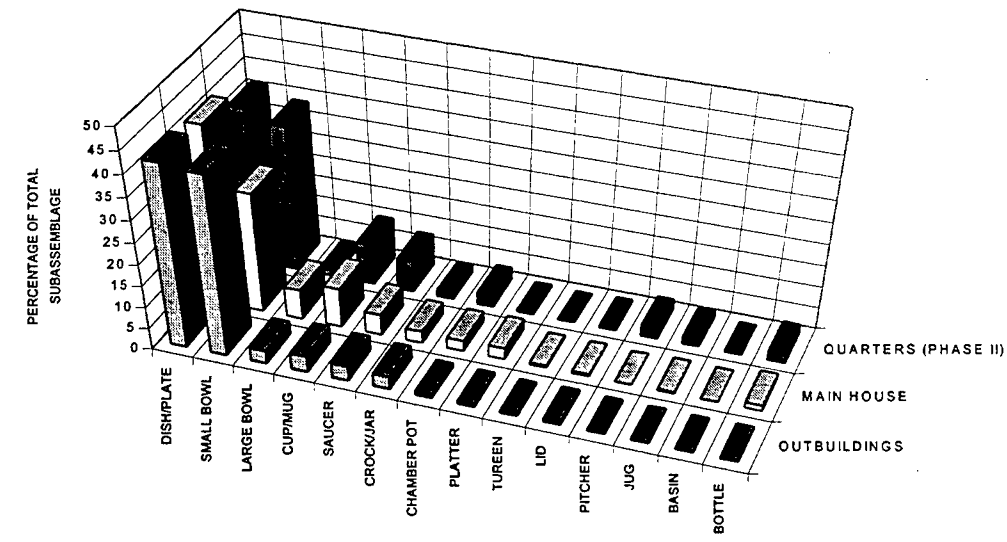


Chart 12. Ceramic vessel forms recovered from the main house, the outbuildings, and the Phase II testing of the quarters.

Table 25. Comparison of Ceramic Vessel Forms by Location and Temporal Period at the Main House and Outbuilding Complexes.

VESSEL FORM	NINA PHASE III, OUTBUILDINGS				NINA PHASE III, MAIN HOUSE			
	EARLY		LATE		EARLY		LATE	
	n	%	n	%	n	%	n	%
BASIN	0	**0.0**	1	**0.2**	0	**0.0**	0	**0.0**
BOTTLE	1	**0.8**	0	**0.0**	0	**0.0**	10	**1.9**
BOWLS	56	**47.5**	180	**38.8**	63	**29.0**	139	**27.0**
LARGE BOWLS	2	**1.7**	15	**3.2**	5	**2.3**	46	**8.9**
CHAMBER POT	1	**0.8**	4	**0.9**	0	**0.0**	18	**3.5**
CROCK/JAR	9	**7.6**	9	**1.9**	10	**4.6**	7	**1.4**
CUP/MUG	7	**5.9**	16	**3.4**	32	**14.7**	36	**7.0**
DISH/PLATE	39	**33.1**	213	**46.0**	88	**40.6**	214	**41.6**
PLATTER	0	**0.0**	4	**0.9**	5	**2.3**	14	**2.7**
JUG	0	**0.0**	2	**0.4**	0	**0.0**	1	**0.2**
LID	1	**0.8**	3	**0.6**	0	**0.0**	2	**0.4**
PITCHER	0	**0.0**	1	**0.2**	0	**0.0**	0	**0.0**
SAUCER	2	**1.7**	15	**3.2**	14	**6.5**	24	**4.7**
TUREEN	0	**0.0**	1	**0.2**	0	**0.0**	4	**0.8**
TOTAL	**118**		**464**		**217**		**515**	

Table 26. Chi-squared Test of Independence for the Distribution of Vessel Forms at the Main House and the Outbuilding Complexes.

OBSERVED FREQUENCIES			
FORM	OUTBUILDINGS	MAIN HOUSE	TOTAL
Bowls	264	206	470
Large Bowls	19	51	70
Plates	269	307	576
Platters	4	19	23
Saucers	22	36	58
Cups	24	68	92
Total	602	687	1289
EXPECTED FREQUENCIES			
FORM	OUTBUILDINGS	MAIN HOUSE	TOTAL
Bowls	219.50	250.50	470.00
Large Bowls	32.69	37.31	70.00
Plates	269.01	306.99	576.00
Platters	10.74	12.26	23.00
Saucers	27.09	30.91	58.00
Cups	42.97	49.03	92.00
Total	602.00	687.00	1289.00
Probability (p) = 0.0000000003171		**DF = 5**	

Table 27. Chi-squared Test of Independence for Distribution of Bowls and Cups at the Outbuilding and Main House Complexes.

OBSERVED FREQUENCY			
FORM	OUTBUILDINGS	MAIN HOUSE	TOTAL
Bowls	264	206	470
Cups	24	68	92
Total	288	274	562
EXPECTED FREQUENCY			
FORM	OUTBUILDINGS	MAIN HOUSE	TOTAL
Bowls	240.85	229.15	470.00
Cups	47.15	44.85	92.00
Total	288.00	274.00	562.00
Probability (p) = 0.0000001297818		**DF = 1**	

Table 28. Chi-squared Test of Independence for the Distribution of Large Bowls and Saucers at the Outbuilding and Main House Complexes.

OBSERVED FREQUENCIES			
FORM	OUTBUILDINGS	MAIN HOUSE	TOTAL
Large Bowls	19	51	70
Saucers	22	36	58
Total	41	87	128
EXPECTED FREQUENCIES			
FORM	OUTBUILDINGS	MAIN HOUSE	TOTAL
Large Bowls	22.42	47.58	70.00
Saucers	18.58	39.42	58.00
Total	41.00	87.00	128.00
Probability (p) =0.192861619		**DF = 1**	

Table 29. Chi-squared Test of Independence for the Distribution of Bowls, Cups, and Plates from the Early and Late Periods at the Outbuilding and Main House Complexes.

OUTBUILDING COMPLEX			
OBSERVED FREQUENCY			
FORM	EARLY	LATE	TOTAL
Bowls	56	180	236
Cups	7	16	23
Plates	39	213	252
Total	102	409	511
EXPECTED FREQUENCY			
FORM	EARLY	LATE	TOTAL
Bowls	47.11	188.89	236.00
Cups	4.59	18.41	23.00
Plates	50.30	201.70	252.00
Total	102.00	409.00	511.00
Probability (p) =0.032568025		**DF = 2**	
MAIN HOUSE COMPLEX			
OBSERVED FREQUENCY			
FORM	EARLY	LATE	TOTAL
Bowls	63	139	202
Cups	32	36	68
Plates	88	214	302
Total	183	389	572
EXPECTED FREQUENCY			
FORM	EARLY	LATE	TOTAL
Bowls	64.63	137.37	202.00
Cups	21.76	46.24	68.00
Plates	96.62	205.38	302.00
Total	183.00	389.00	572.00
Probability (p) = 0.015886295		**DF = 2**	

present the results of calculations intended to identify which forms contributed most strongly to the formal patterning. The probability of random distribution also was very low for bowls and cups (Table 27) (p=0.0000001297818), suggesting that their distributional pattern was statistically significant. However, the chi-squared test conducted on the large bowl and saucer data returned a much higher probability figure, suggesting that there was little relationship between these forms and their provenience (Table 28).

The temporal distribution of vessel forms at the Outbuilding complex and the Main House complex also was subjected to a chi-squared test of independence. In this case, only those forms that exhibited the greatest amount of diachronic

Table 30. Comparison of Flat and Hollow Ceramic Forms at Nina and Ashland-Belle Helene Plantations.

VESSEL FORM	NINA PHASE III, OUTBUILDINGS		NINA PHASE III, MAIN HOUSE		NINA PHASE II, KITCHEN		NINA PHASE II, QUARTERS		ASHLAND-BELLE HELENE, CABIN 1		ASHLAND-BELLE HELENE, CABIN 2	
	n	%	n	%	n	%	n	%	n	%	n	%
HOLLOW	424	52.0	492	51.5	53	52.0	129	54.4	155	56.2	143	50.9
FLAT	392	48.0	464	48.5	49	48.0	108	45.6	121	43.8	138	49.1
TOTAL	**816**		**956**		**102**		**237**		**276**		**281**	

change in relative frequency were included in the test. The proportions of bowls, cups, and plates from the early and the late periods were compared in separate tests for the Outbuildings and the Main House (Table 29). The resultant probability figures appear to validate the observed distributional differences in diachronic perspective, albeit not as clearly as the simple comparison of components.

John Otto's conclusion that a relationship existed between social status and the distribution of hollow and flat ceramic forms at Cannon's Point Plantation (Otto 1984:166) was tested using the data from Nina Plantation. Ceramic vessels were divided into hollowware and flatware. Hollowware included ceramics that were intended to hold liquid (bowls, cups, jars, and tureens), and flatware included plates, platters, dishes, and saucers; only vessels with food-related functions were included. Table 30 offers comparative spatial data from the Phase III Outbuilding complex and the Main House complex, as well as data from the Phase II testing at Nina Plantation (Yakubik et al. 1994), and from excavations at Ashland-Belle Helene Plantation (Yakubik 1994). All proveniences displayed similar proportions of hollow and flatwares, but a chi-squared test of independence was used to determine if the slight observed differences in distribution were statistically significant. Table 31 presents the results of a chi-squared test of independence using the figures for hollow and flatware from both the main house and the outbuildings. The extremely high probability figure (0.834912592) indicates little chance of a significant pattern in this spatial distribution. Because cups and bowls already have been demonstrated to display significantly different patterns of distribution, this result for the distribution of hollow and flatware indicates either that the arbitrary grouping is at fault, and that the distinction between hollow and flatware was probably not socially or culturally significant, or that the significant differences between these subassemblages were not entirely in the spatial realm.

Analysis of the temporal distribution pattern of hollow and flatware (Chart 13) suggests that the proportion of hollow and flat forms at the Outbuilding complex changed dramatically between the early and the late periods. A high ratio of hollow forms (64.7 percent) to flat forms (36.2 percent) in the early period, came to mimic the proportions of the vessel forms in the main house (51.2 percent and 48.8 percent, respectively) during the late period. Chi-squared analysis of this change (Table 32) returned a zero percent probability of a chance distribution. The same test conducted on data from the main house, only suggested that temporal differences in these distribution were insignificant (Table 33). A chi-

Table 31. Chi-squared Test of Independence for the Distribution of Hollow and Flat Vessel Forms from the Outbuilding and Main House Complexes.

OBSERVED FREQUENCY			
FORM	OUTBUILDINGS	MAIN HOUSE	TOTAL
Hollow	424	492	916
Flat	392	464	856
Total	816	956	1772
EXPECTED FREQUENCY			
FORM	OUTBUILDINGS	MAIN HOUSE	TOTAL
Hollow	421.81	494.19	916.00
Flat	394.19	461.81	856.00
Total	816.00	956.00	1772.00
Probability (p) = 0.834912592			**DF = 1**

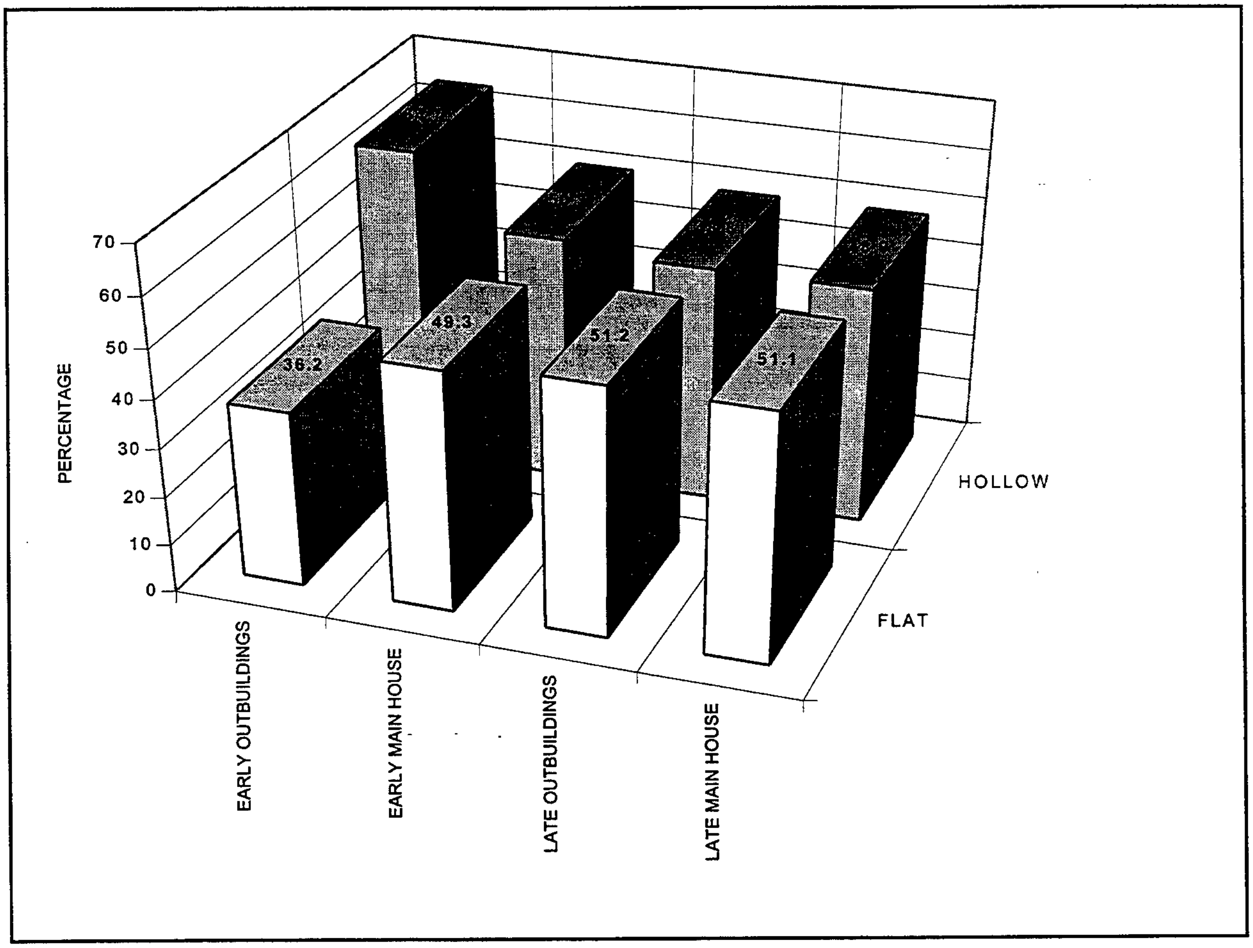


Chart 13. Hollow and flat vessel forms recovered from the Early and Late periods.

Table 32. Chi-squared Test of Independence of Temporal Differences in the Distribution of Hollow and Flat Ceramic Forms in the Outbuilding Complex.

OBSERVED FREQUENCY			
FORM	EARLY	LATE	TOTAL
Hollow	75	224	299
Flat	42	235	277
Total	117	459	576
EXPECTED FREQUENCY			
FORM	EARLY	LATE	TOTAL
Hollow	60.734375	238.265625	299
Flat	56.265625	220.734375	277
Total	117	459	576
Probability (p) = 0.003106587		**DF = 1**	

Table 33. Chi-squared Test of Independence of Temporal Differences in the Distribution of Hollow and Flat Ceramic Forms in the Main House Complex.

OBSERVED FREQUENCY			
	EARLY	LATE	TOTAL
Hollow	110	243	353
Flat	107	254	361
Total	217	497	714
EXPECTED FREQUENCY			
	EARLY	LATE	TOTAL
Hollow	107.2843137	245.7156863	353
Flat	109.7156863	251.2843137	361
Total	217	497	714
Probability (p) = 0.658521881		**DF = 1**	

Table 34. Chi-squared Test of Independence for Temporal Differences in the Distribution of Hollow and Flat Ceramic Vessels From the Outbuildings and Main House.

OBSERVED FREQUENCY			
	HOLLOW	FLAT	TOTAL
Early Outbuildings	75	42	117
Early Main House	110	107	217
Late Outbuildings	224	235	459
Late Main House	243	254	497
Total	652	638	1290
EXPECTED FREQUENCY			
	HOLLOW	FLAT	TOTAL
Early Outbuildings	59.13	57.87	117.00
Early Main House	109.68	107.32	217.00
Late Outbuildings	231.99	227.01	459.00
Late Main House	251.20	245.80	497.00
Total	652.00	638.00	1290.00
Probability (p) = 0.021243237			**DF = 3**

squared test using combined data from both the main house and the outbuildings returned a very low probability figure (Table 34), confirming the overall pattern of temporal and spatial disparity between the early and late periods at the Outbuilding and the Main House complexes.

As these data have shown, significant differences in the proportions of bowls were observed between cups at the Main House and the Outbuildings. These differences were more pronounced during the early period of occupation at the site. During the latter half of the nineteenth century, the differential distribution of vessel forms was far less marked, with stronger proportional similarities between the two areas of the site. This significant change in distribution pattern may have coincided with the change in ownership of the plantation in the 1850s, with a possible shift in the location of the kitchen, or alternatively with the abolition of slavery on the plantation.

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Functional Analyses

The majority of recovered artifacts were assigned a function code during analysis; these codes corresponded to functional categories devised for this project. Table 35 presents a list of these categories, along with examples of the various artifact types classified in each category. This list also appears in Appendix I. Discussion and description of many of these miscellaneous artifacts appears in Chapter VII. In order to facilitate comparison, the functional categories were combined into six more general groups. The first group, Food Related Artifacts, included Food Consumption, Food Preparation, and Storage categories. Household Activities included Lighting, Furniture, and Household Tools/Implements (i.e., scissors, buckets, and axes). The Personal group incorporated Personal Clothing, Personal Adornment, Spiritual/Ideological (a religious medal), Hygiene, Medicine, and Personal categories. The Miscellaneous group included artifacts that did not easily fit into the other gross categories. This included Security, Toys/Games, Music, and Currency. The Architectural group included Architectural Elements, Construction Hardware, and Construction Tools. The final general group, Agricultural/Food Procurement, incorporated the categories of Non-Agricultural Food Procurement, and Agricultural Tools/Implements. Functional subcategories were maintained during analysis, so that more detailed analyses could be carried out.

Only artifacts whose original function was clearly identifiable were included in the analysis; for this reason, the ceramic vessel database was used, rather than the more general ceramic database. Spatial and chronological comparisons were made between the Outbuilding complex and the Main House complex, and between he Early and Late periods. The sample for the analysis of the outbuildings included 21,349 artifacts in 21 functional categories; the sample size for the main house analysis was 34,428 artifacts, in 20 func-

Table 35. Nina Plantation Functional Typology.

FUNCTIONAL TYPOLOGY CODE	FUNCTIONAL TYPOLOGY CLASS	EXAMPLES OF CLASS
1	Non-Agricultural Food Procurement	Firearms; Ammunition; Traps
2	Food Consumption	Plates; Glass Tableware; Eating Utensils
3	Food Preparation	Large Ceramic Bowls; Stove Parts; Skillets
4	Food Storage	Metal Cans; Ceramic and Glass Jars; Crocks
5	Lighting	Lamp Parts; Candlesticks
6	Furniture	Spittoons; Mirrors; Vases
7	Architectural	Brick; Window Glass
8	Construction Hardware	Nails; Bolts; Nuts
9	Construction Tools	Hammer; Chisel
10	Household Tools/Implements	Scissors; Buckets; Axes
11	Agricultural Tools/Implements	Hoes; Chain; Equine Tacks
12	Security	Locks; Keys; Firearms
13	Personal Clothing	Buttons; Buckles; Shoes
14	Personal Adornment	Beads; Jewelry; Hairpins
15	Toys/Games	Doll Parts; Dominos; Marbles
16	Music	Musical Instrument Parts; Victrola
17	Spiritual/Ideological	Religious Medals; Witch Bottle; Bible Clasp
18	Hygiene	Chamber Pots; Combs; Toothbrushes
19	Currency	Coins
20	Medicine	Medicine Bottles; Syringes
21	Personal	Tobacco Pipes; Eye Glasses; Figurines

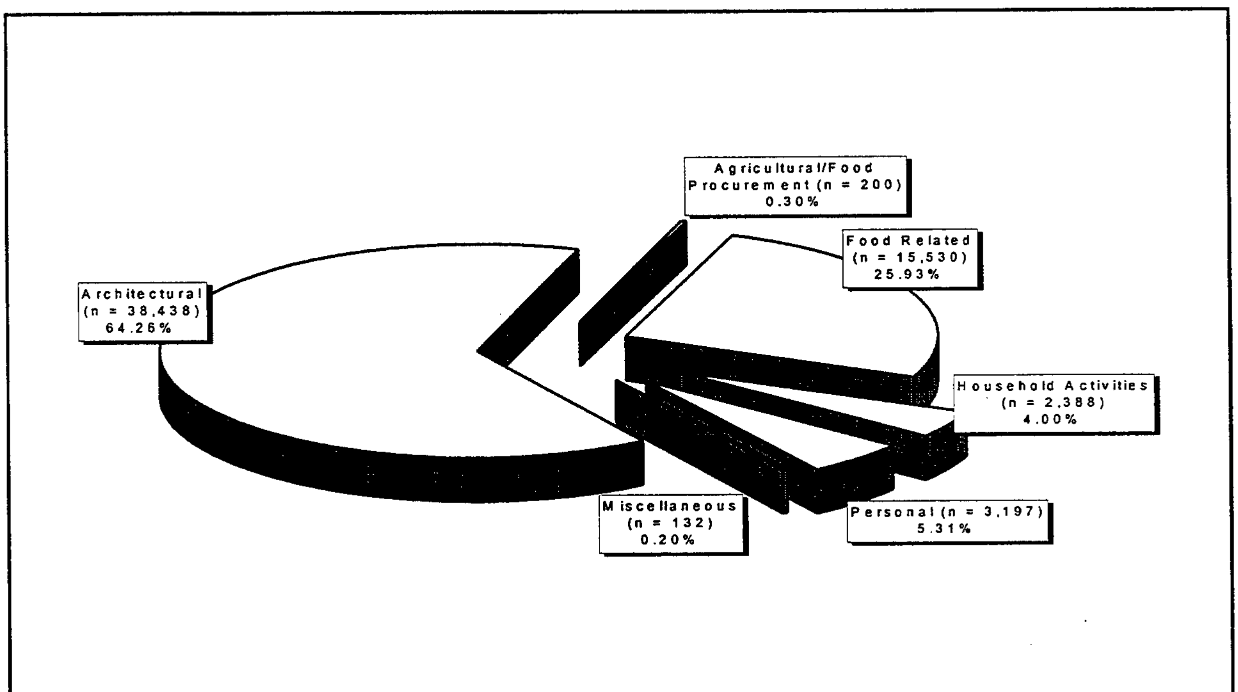

Chart 14. Artifact functional group frequencies in Blocks C, D, E, and F.

tional categories. Chart 14 illustrates the proportionate relationships of the six functional groups at the site. The highest percentage is the Architectural group, reflecting the high numbers of nails and bricks at the site. Food related artifacts comprised 25.93 percent of the total, and personal, household activities, agricultural/food procurement, and miscellaneous artifacts all comprised 5 percent or less of the total.

Chart 15 compares frequencies of artifact functional groups from the Outbuilding complex. A total of 61.3 percent (n = 13,152) of the recovered cultural material was related to architectural activities. The next highest percentage (29 percent, n = 6,226) was the Food Related group, and the Personal group accounted for 7.5 percent (n = 1,601) of the total number of artifacts from the Outbuilding complex. Artifacts related to household activities comprised 1.4 percent (n = 297) of the total, while miscellaneous artifacts accounted for 0.40 percent (n = 87). Finally, the remaining 0.40 percent (n = 76) of the artifacts recovered from the Outbuilding complex were assigned to the Agricultural/Food Procurement group.

Artifact functional groups from the Main House complex are depicted in Chart 16. The same general pattern demonstrated at the Outbuilding complex was evident at the Main House complex. A total of 66.35 percent (n = 22,862) of the artifacts recovered were architectural in function, and the Food Related group comprised 23.18 percent (n = 7,993) of the recovered artifacts. Personal artifacts accounted for 4.30 percent (n = 1,474), household activities accounted for 5.80 percent (n = 1,983), miscellaneous artifacts accounted for 0.08 percent (n = 28), and agricultural/food procurement artifacts comprised for the remaining 0.30 percent (n = 88) of the total.

Charts 15 and 16 suggest only slight differences in the scope of activities conducted in the two areas of the site. An examination of the func-

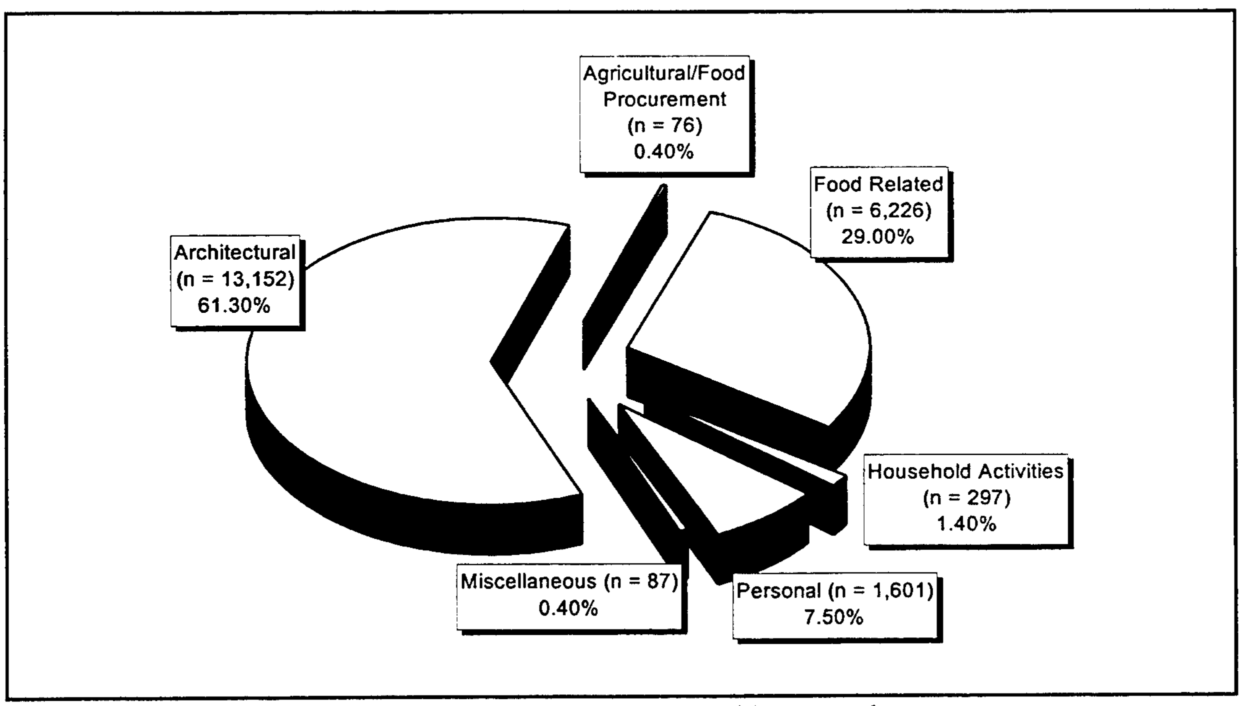

Chart 15. Artifact functional group frequencies in the Outbuilding complex.

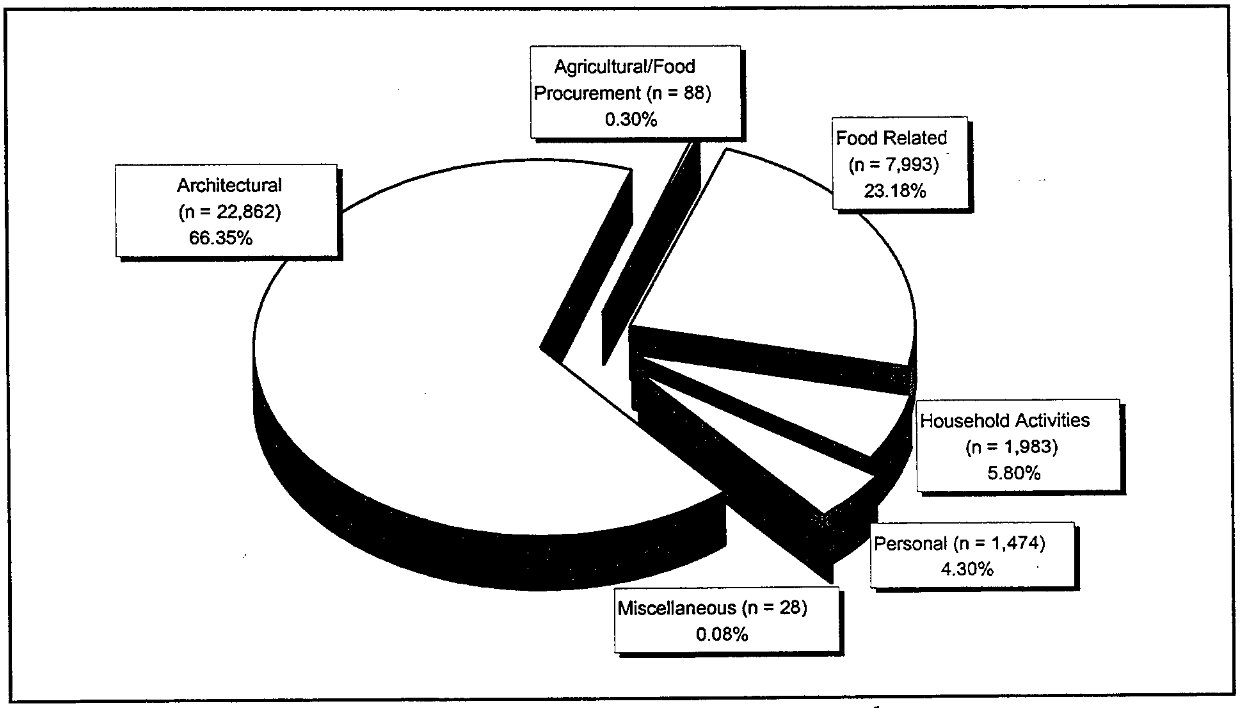

Chart 16. Artifact functional group frequencies in the Main House complex.

tional subcategories comprising the major groups also displayed few differences between the two complexes (Charts 17 - 26). The greatest discrepancy was noted in the Agricultural/Food Procurement group at the Outbuilding complex (Charts 23 and 24). At the outbuildings, the subcategory of Agricultural Tools/Implements constituted 59.14 percent (n=45) of the total, compared to 27.3 percent (n=24) of the total at the Main House complex. Minor differences were demonstrated in the Personal group (Charts 25 and 26), where discrepancies between the outbuilding and main house subassemblages were noted in the medicine, clothing, hygiene, and personal adornment subcategories.

Comparison of functional groups over time failed to reveal major differences between the Main House and Outbuilding complexes, but did disclose site-wide pattern changes. Because of the dramatic increase in architectural debris from the final destruction of the plantation structures, the architectural group was eliminated from these comparisons. Comparison of the distribution of the functional groups between the early and the late periods at the Outbuilding complex (Charts 27 and 98) showed a decrease of approximately 50 percent in the Food Related functional group during the late period, and significant increases in the Household Activities and Personal groups of functional categories. A similar pattern was evident at the Main House complex (Charts 29 and 30), where functional groups showed a greater proportional increase in the Household Activities group than the Personal group. The higher percentage of Personal group artifacts in the late period Outbuilding complex was due primarily to increases in the number of medicine bottles recovered from these proveniences.

Glass Subassemblage

A large proportion of the cultural materials from Nina Plantation consisted of glass, bottles and sherds. Approximately 32,000 glass sherds and artifacts were collected (see Appendix III and Chapter VII). Because many of these were excellent functional indicators, the glass subassemblage played a major role in the functional analyses conducted for this project. Chart 31 depicts the distribution of the glass subassemblage by type and temporal period. The bulk of the cate-

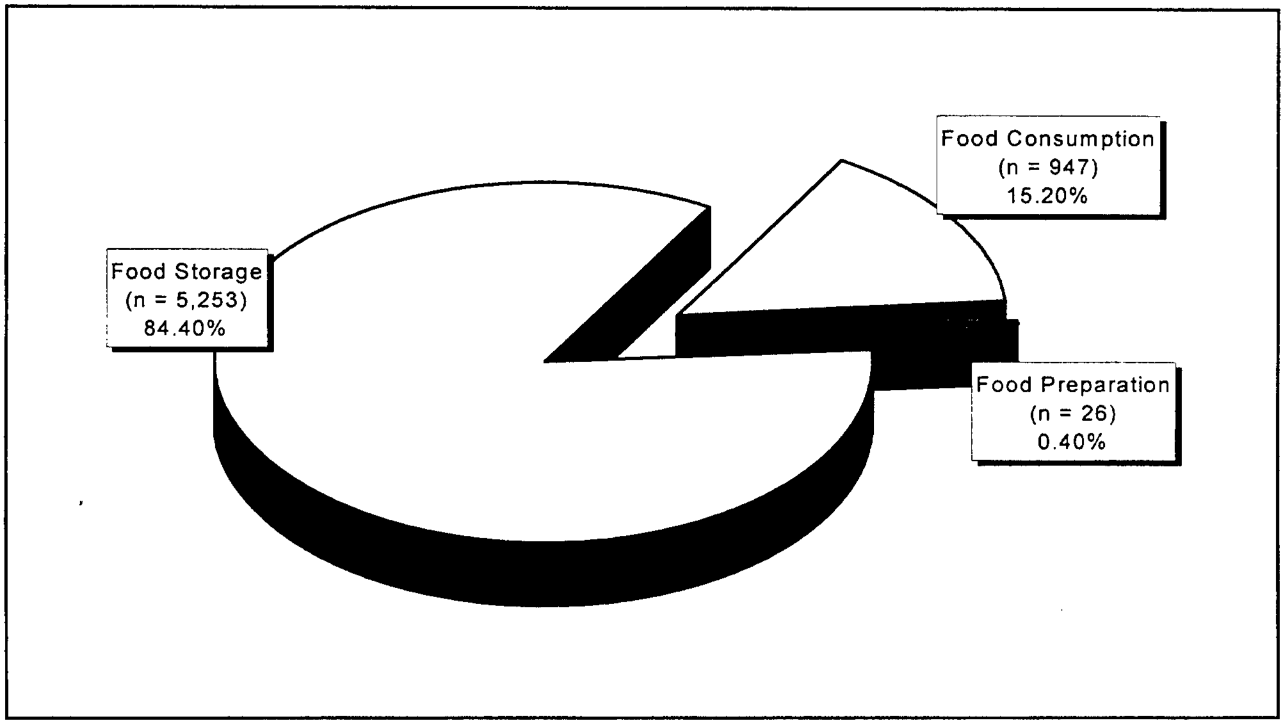

Chart 17. Distribution by percentage of the subcategories of the Food Related functional group in the Outbuilding complex.

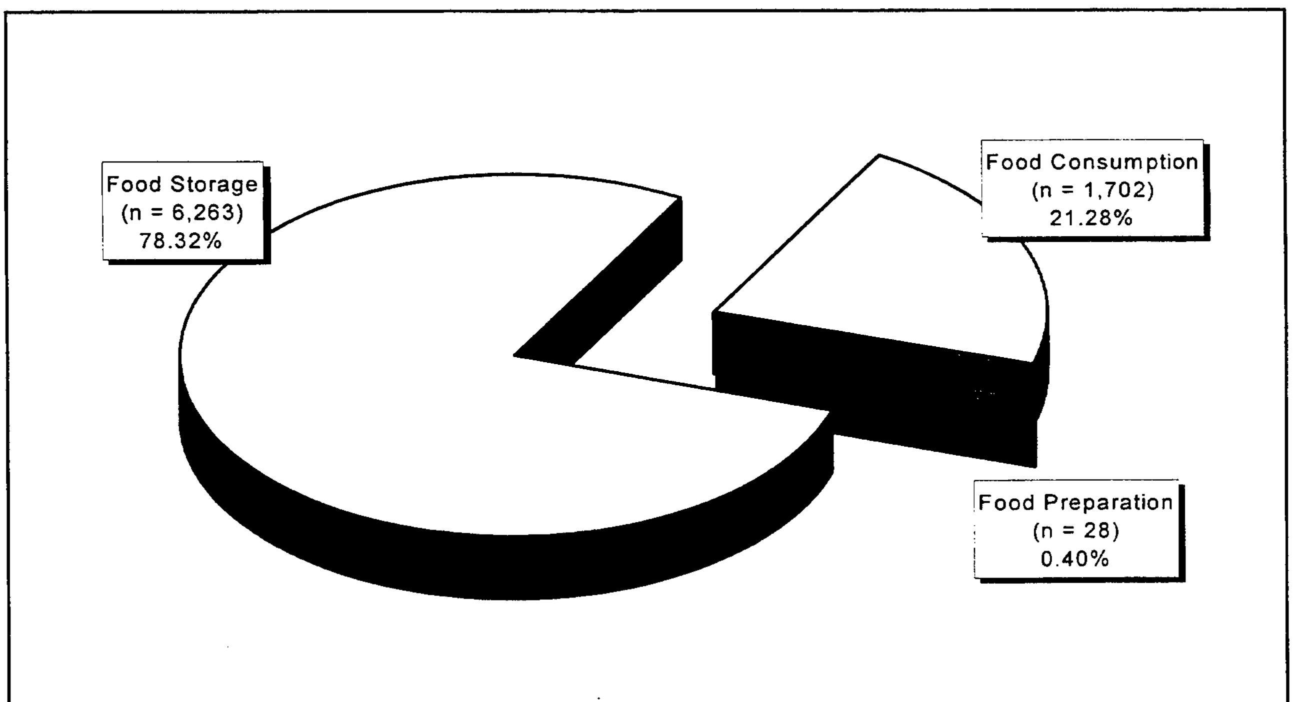

Chart 18. Distribution by percentage of the subcategories of the Food Related functional group in the Main House complex.

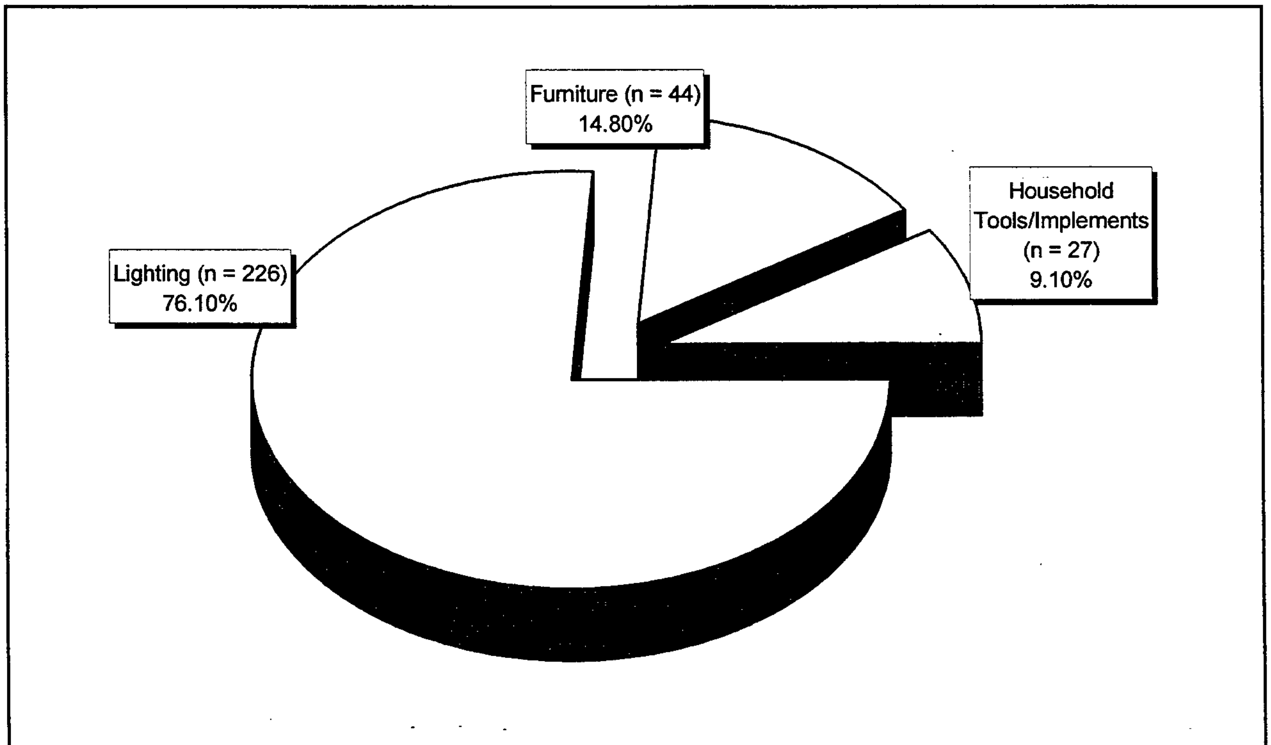

Chart 19. Distribution by percentage of the subcategories of the Household Activities functional group in the Outbuilding complex.

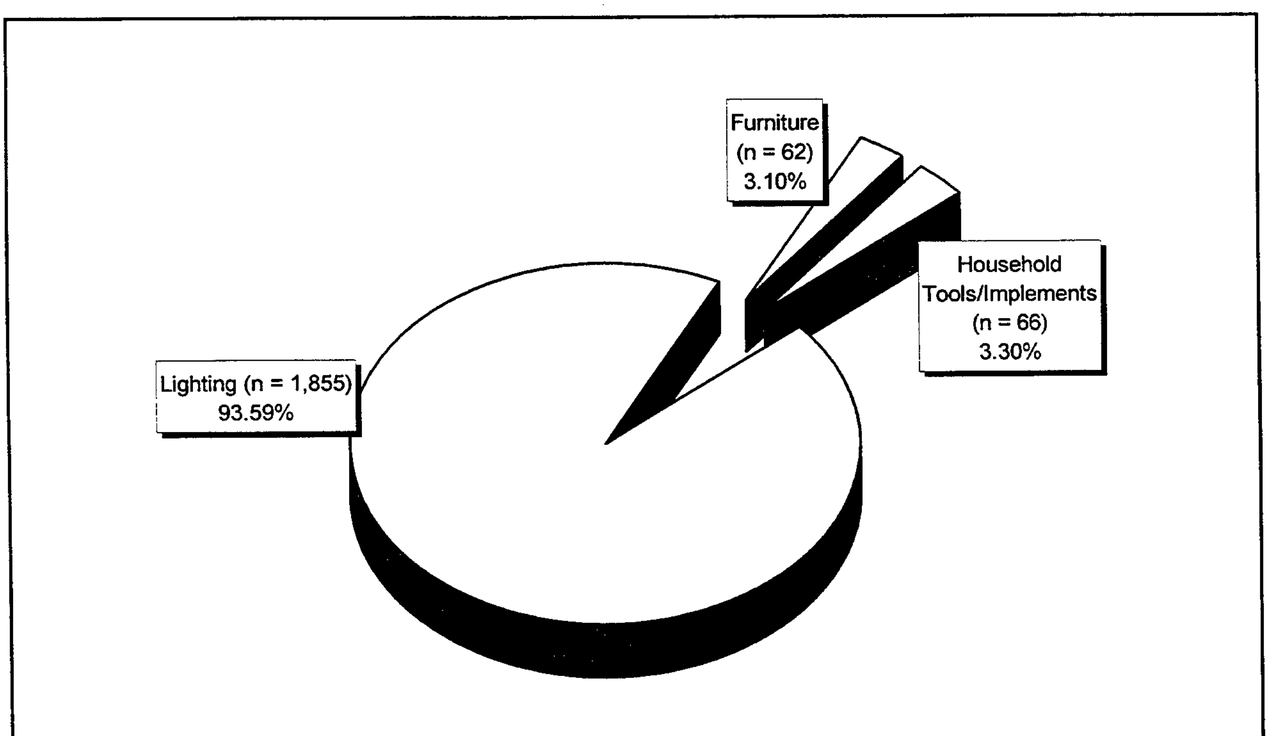

Chart 20. Distribution by percentage of the subcategories of the Household Activities functional group in the Main House complex.

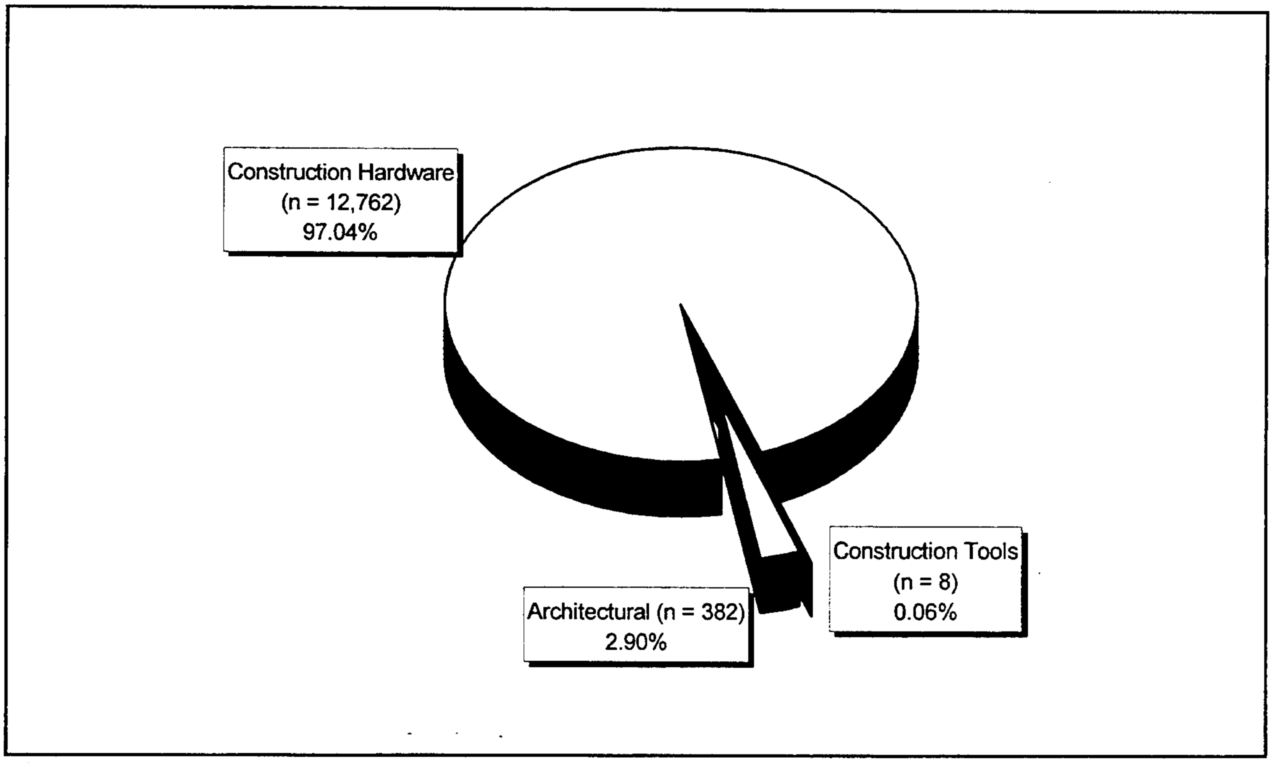

Chart 21. Distribution by percentages of the subcategories of the Architectural functional group in the Outbuilding complex.

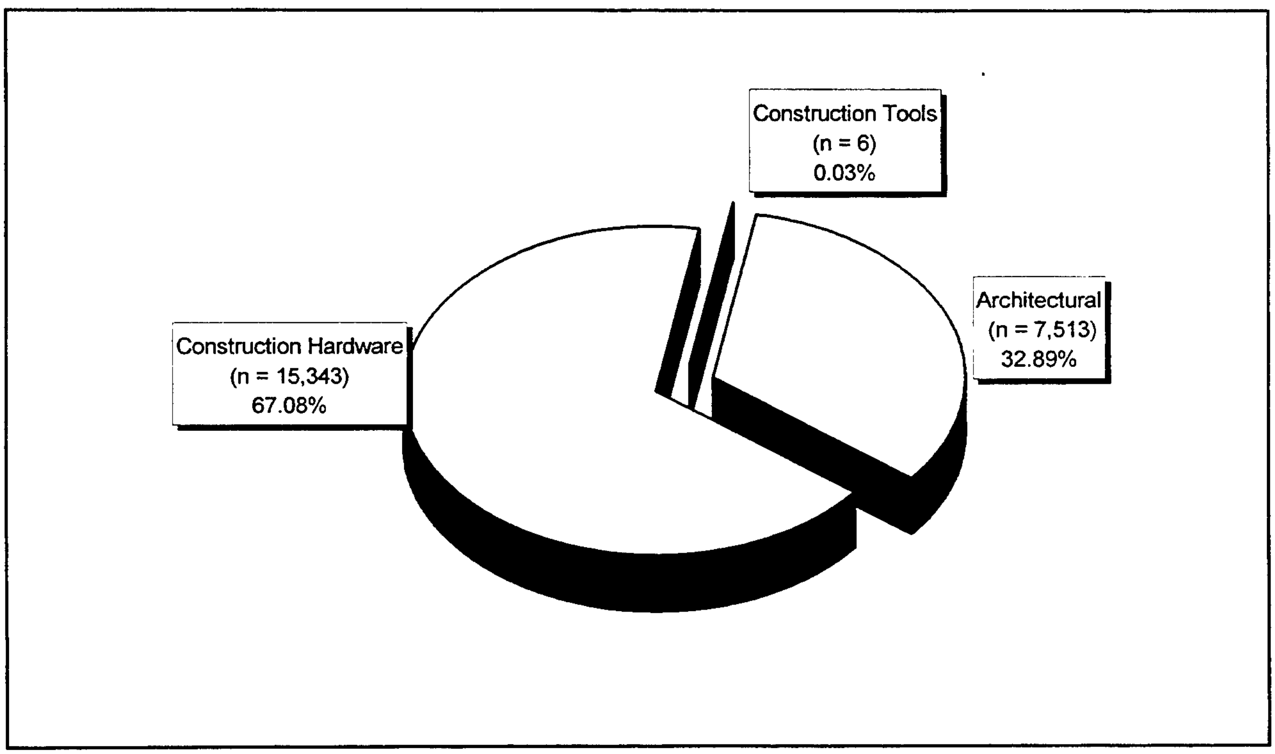

Chart 22. Distribution by percentage of the subcategories of the Architectural functional group in the Main House complex.

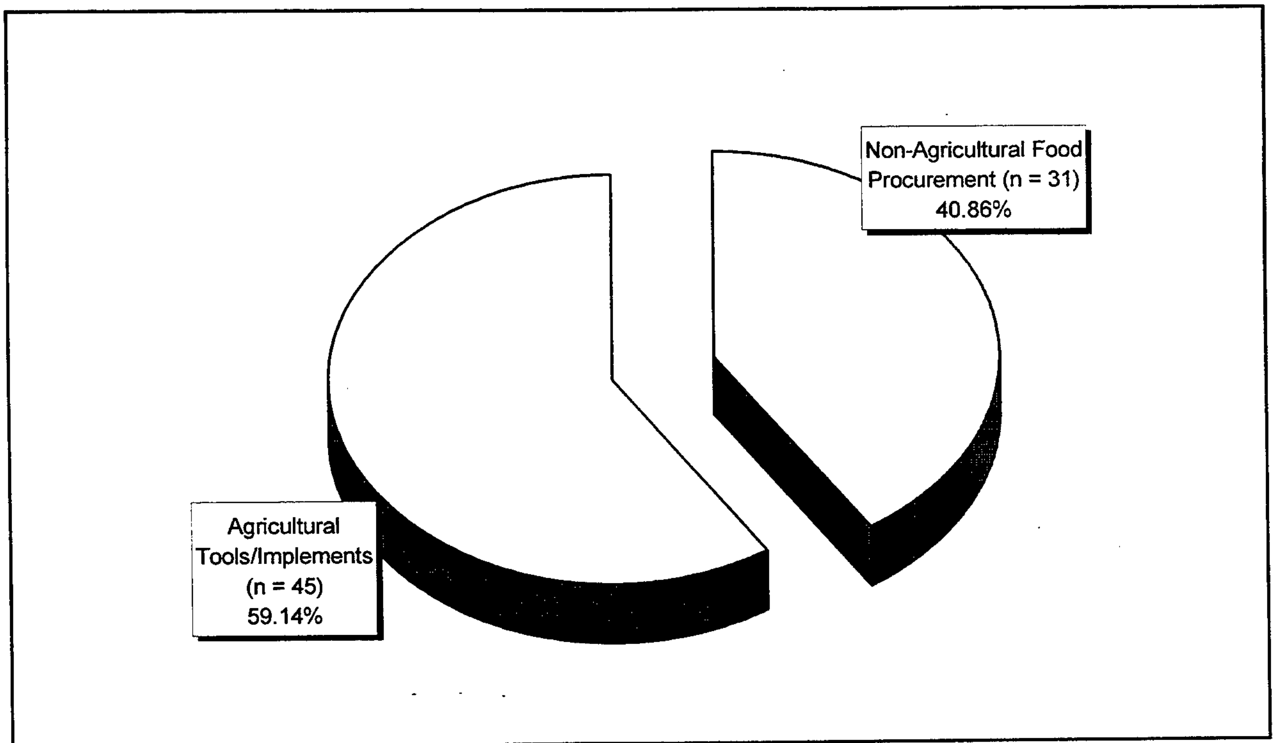

Chart 23. Distribution by percentage of subcategories of the Agricultural/Food Procurement functional group in the Outbuilding complex.

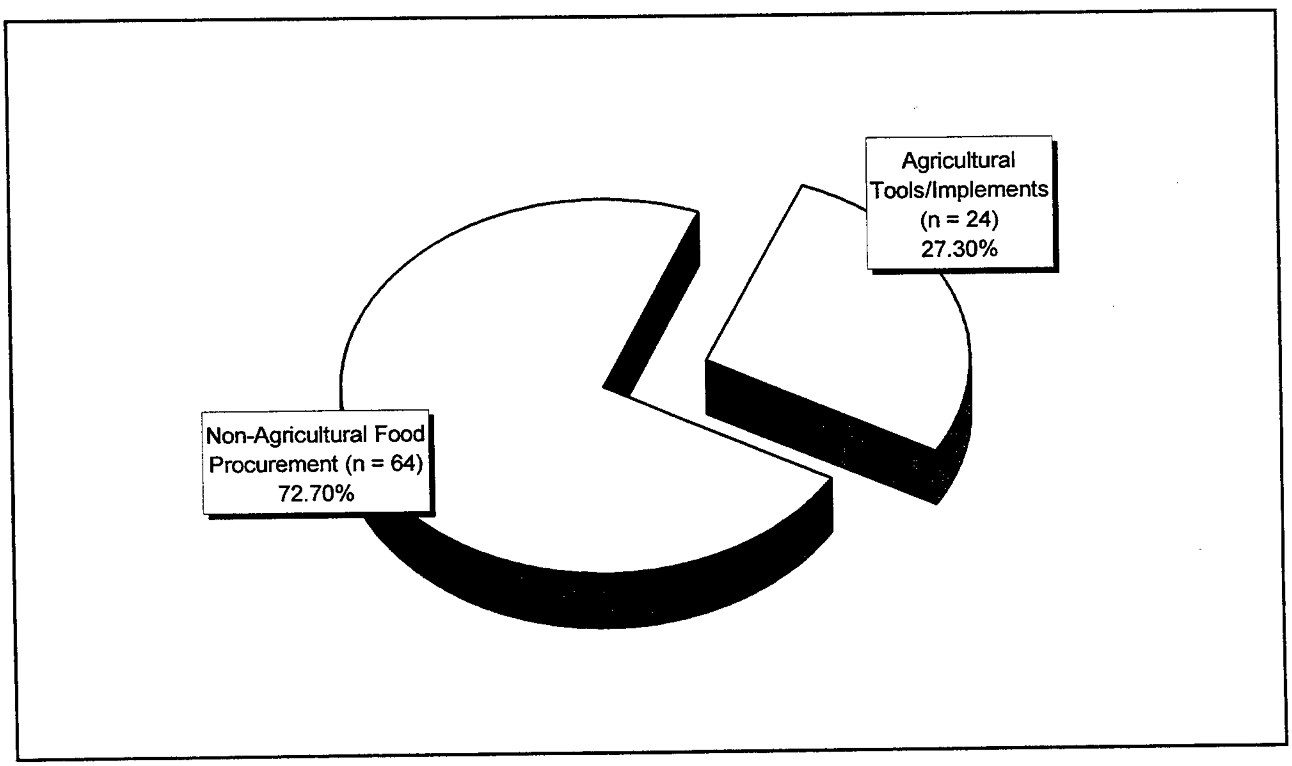

Chart 24. Distribution by percentage of subcategories of the Agricultural/Food Procurement functional group in the Main House complex.

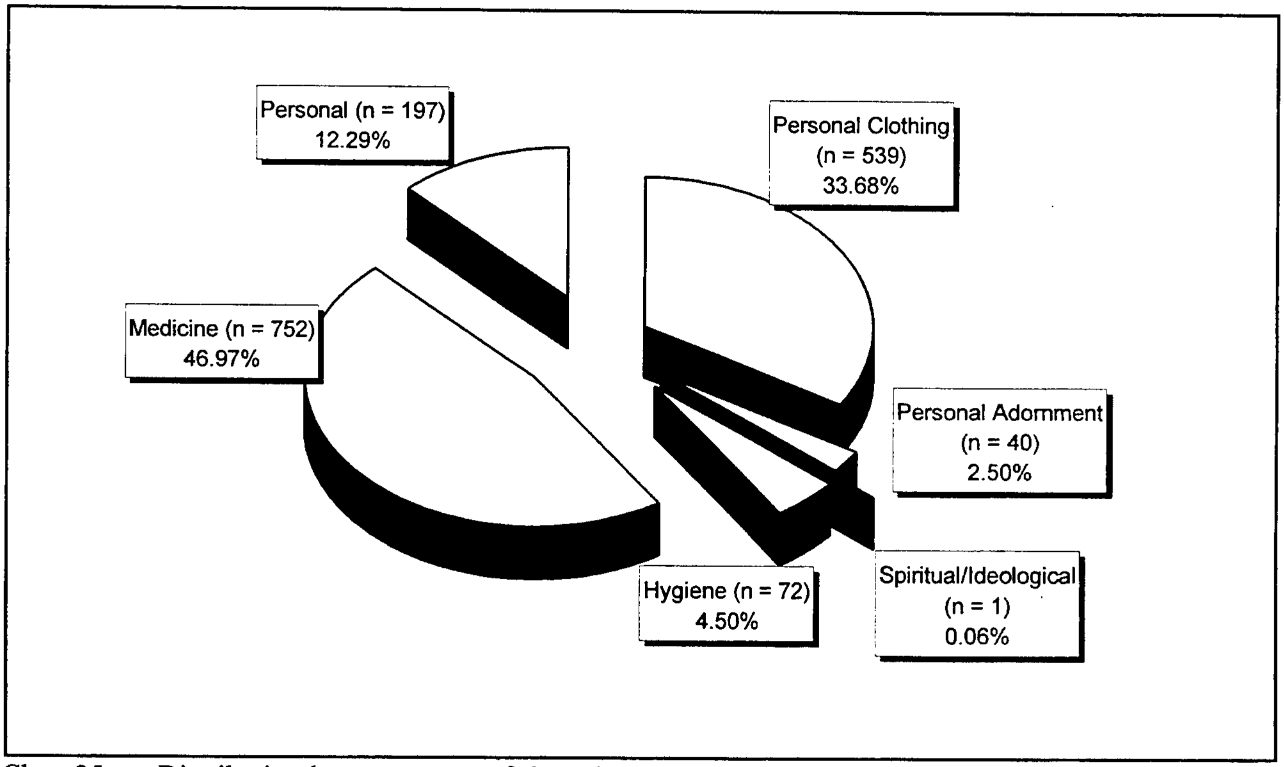

Chart 25. Distribution by percentage of the subcategories of the Personal functional group in the Out-building complex.

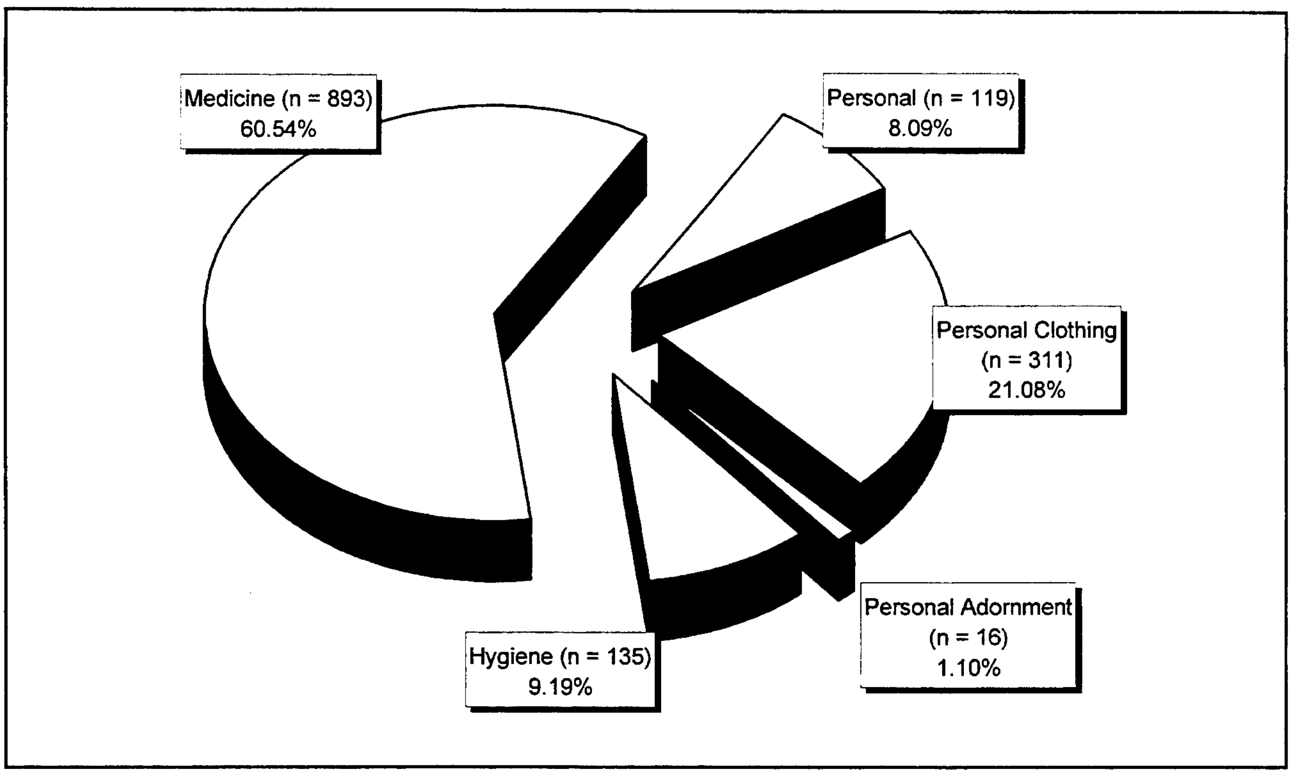

Chart 26. Distribution by percentage of the subcategories of the Personal functional group in the Main House complex.

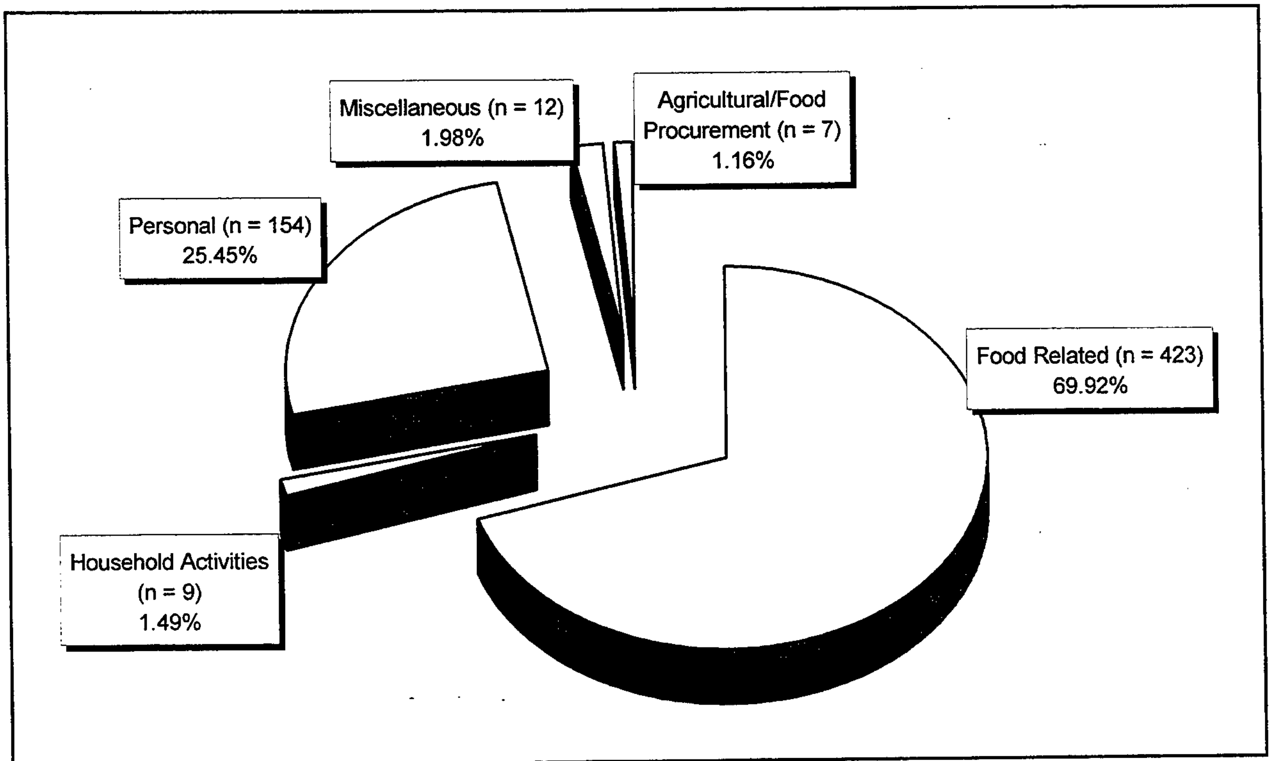

Chart 27. Distribution of artifacts by functional group for the Early period in the Outbuilding complex.

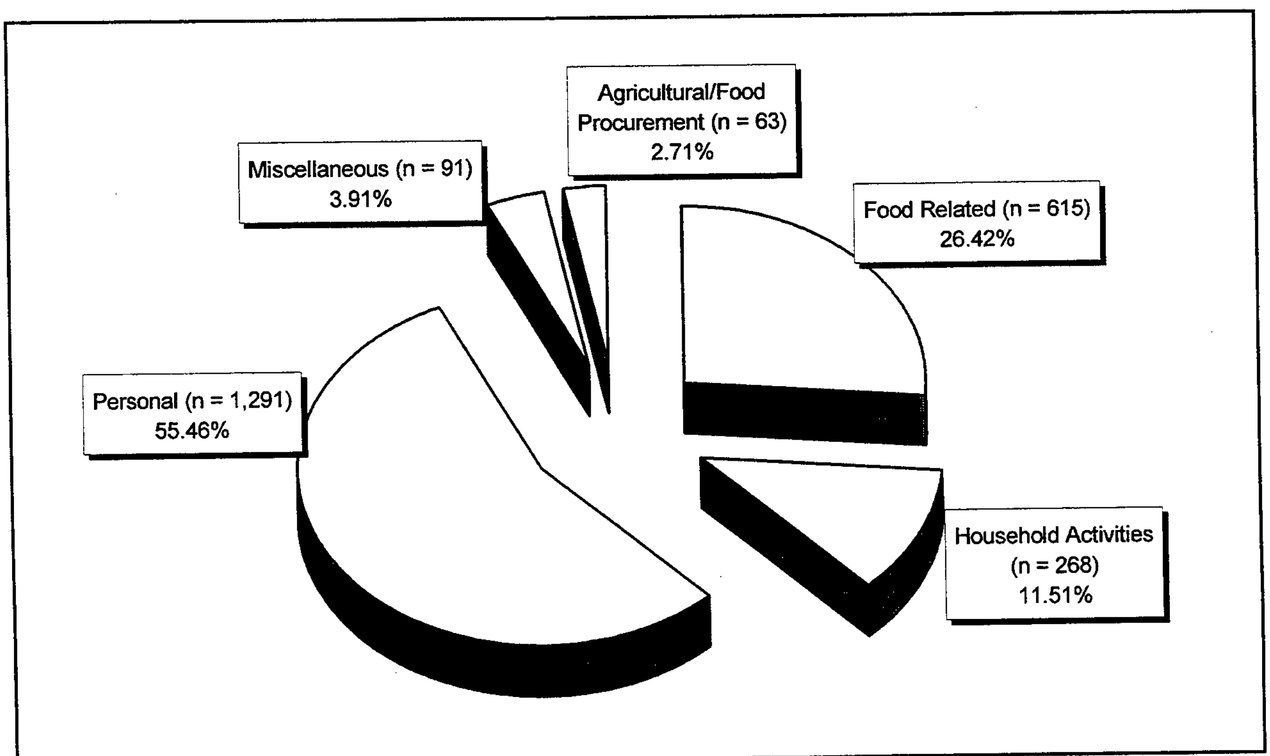

Chart 28. Distribution of artifacts by functional group for the Late period in the Outbuilding complex.

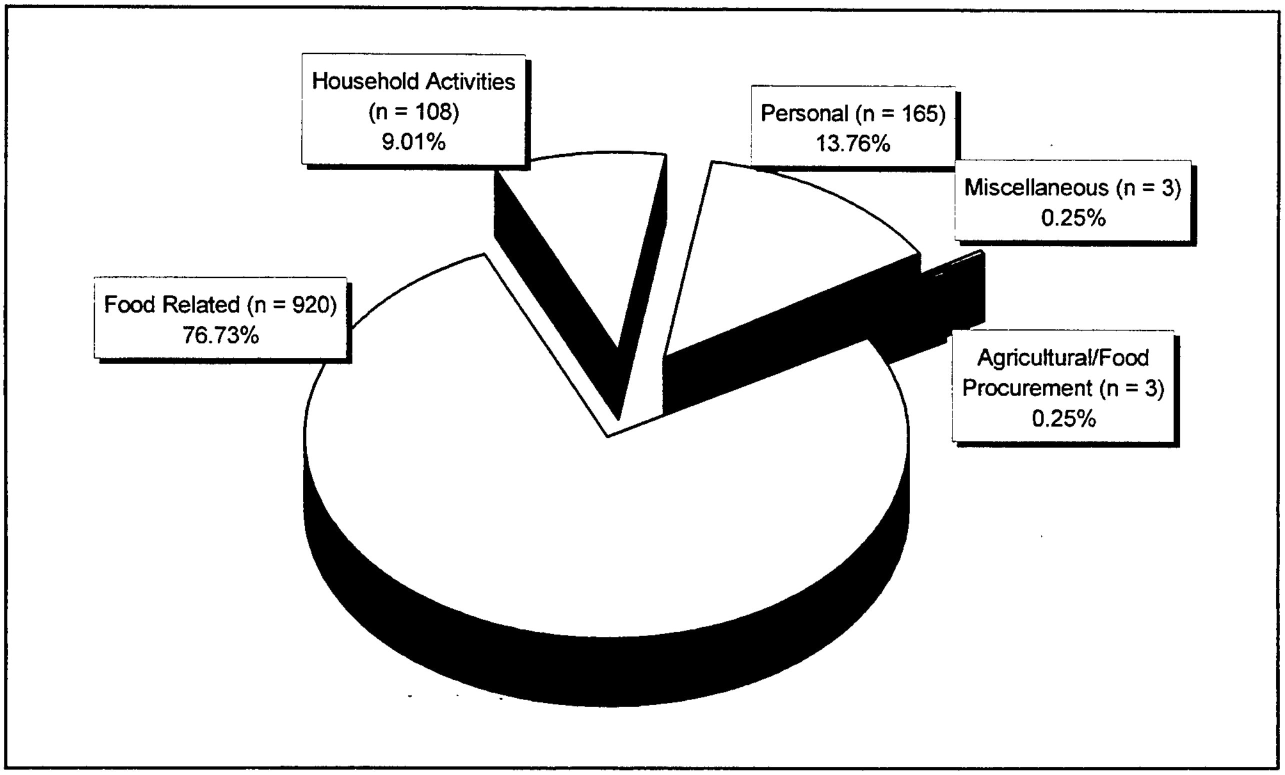

Chart 29. Distribution of artifacts by functional group for the Early period in the Main House complex.

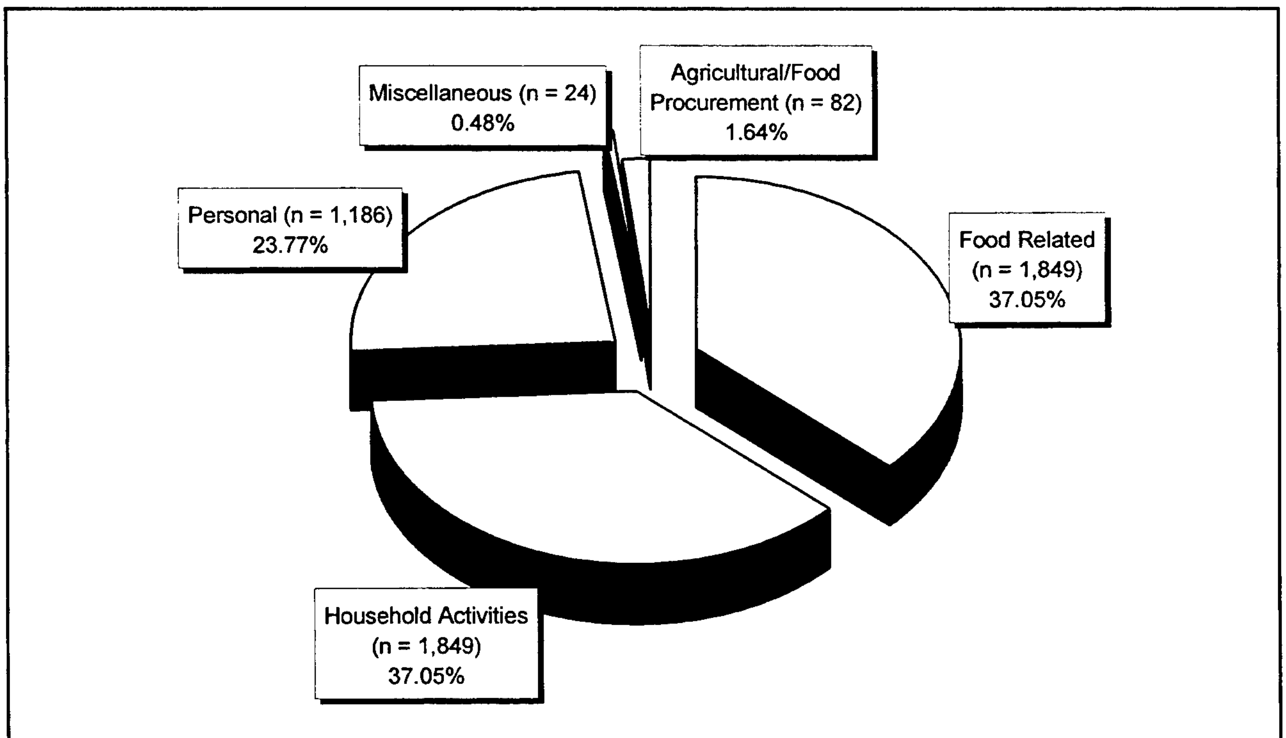

Chart 30. Distribution of artifacts by functional group for the Late period in the Main House complex.

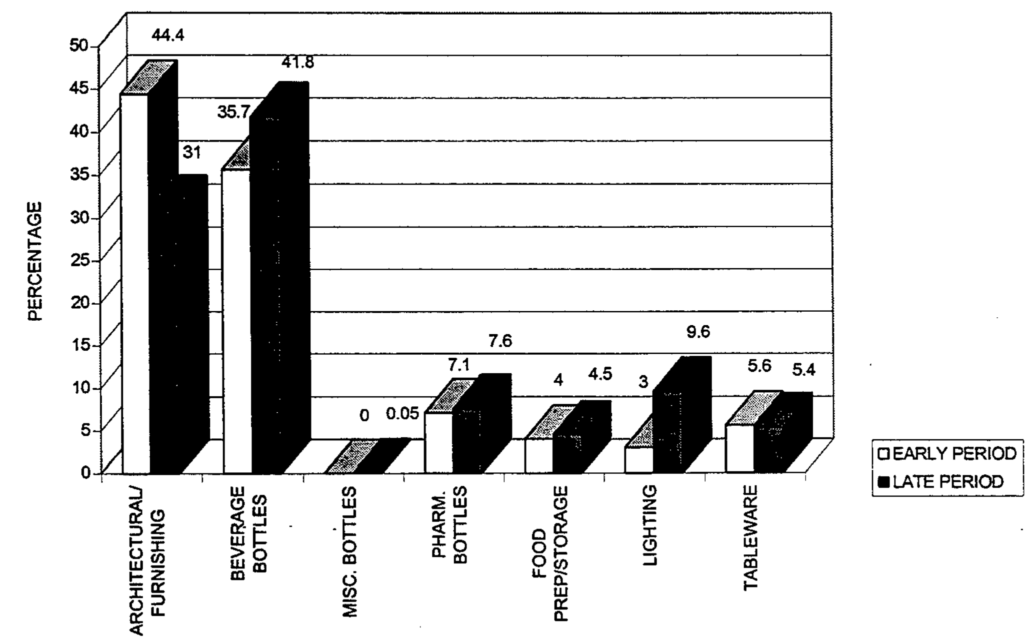

Chart 31. Temporal distribution of glass by functional type in Blocks C, D, and E.

gory Architectural/Furnishing Glass is composed of window glass (Figure 137), while Tableware includes drinking glasses and decanters. The other categories are self explanatory.

Faunal Analysis

Analysis of faunal materials recovered from Nina Plantation was conducted by Dr. Elizabeth M. Scott, of Zooarch Research. Dr. Scott's full report, including all primary data, is contained in Appendix VII of this report. The analytical units for the faunal analysis corresponded to those used for the artifact analyses. Spatial units included the Main House complex and the Outbuilding complex; the temporal units included the major groupings of the Early period (1820 - 1851) and the Late period (1851 - 1890). Chronological sequences developed for site components also were used in these analyses, permitting finer temporal and spatial control within each block (see Tables 10 - 12; Appendix I).

A large range of mammals, amphibians, fish, and birds were identified at Nina Plantation. Table 36 lists the common names and Latin names of taxa recovered from the excavations. The majority of mammalian remains were from domestic species, although wild species were well represented. The latter included white-tail deer, rabbits, squirrels, raccoon, opossum, turtles, alligator, ducks, geese, pigeons, and approximately 15 species of fish.

Table 37 summarizes the primary data from each provenience. Raw numbers in Table 37 were the actual number of bone fragments, while the adjusted number refers to the number of specimens after refitting (see Appendix VII). The larg-

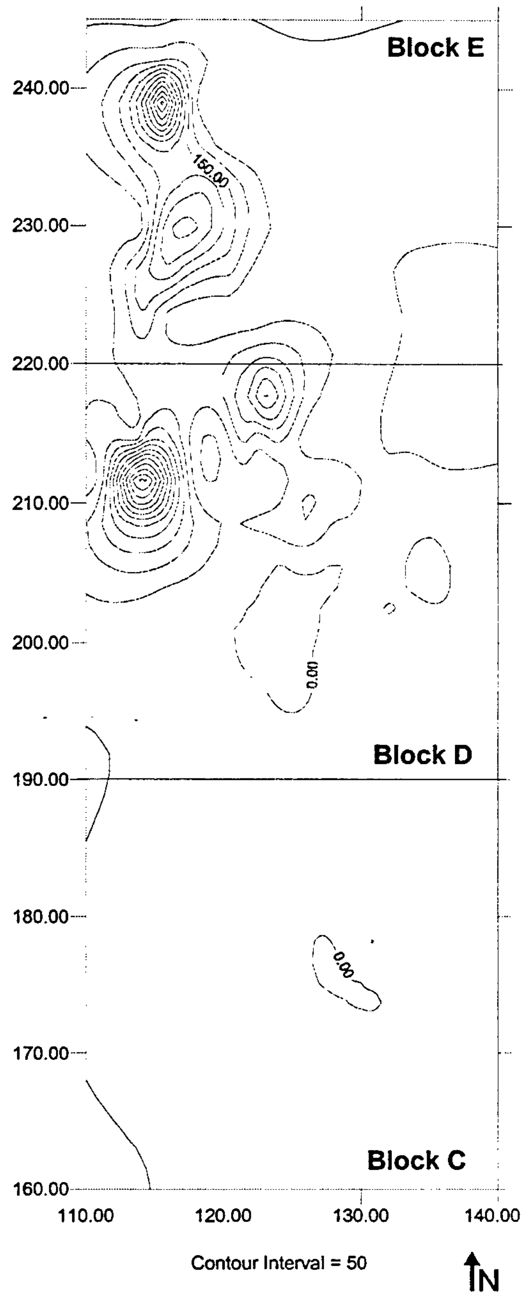

Figure 137. Distribution of window glass in Blocks C, D, and E.

Table 36. Animal Taxa Identified during Analysis of Recovered Faunal Remains.

COMMON NAME	LATIN NAME
Skipjack herring	*Alosa chrysochloris*
Bowfin	*Amia calva*
Ducks, geese, and swans	Anatidae family
Ducks	Anatinae subfamily
Geese & swans	Anserinae subfamily
Freshwater drum	*Aplodinotus grunniens*
Cow	*Bos taurus*
Cow/Deer	Bovidae family/Cervidae family
Canada goose	*Branta canadensis*
Quillback/ Carpsucker	*Carpiodes* sp.
Suckers	Catastomidae family
Sunfishes	Centrarchidae family
Snow goose	*Chen caerulescens*
Rock dove	*Columba livia*
Doves & pigeons	Columbidae family
New World rats & mice	Cricetidae family
Opossum	*Didelphis virginia*
Horse	*Equus caballus*
Domestic cat	*Felis catus*
Chicken	*Gallus gallus*
Catfishes	Ictaluridae family
Blue catfish	*Ictalurus furcatus*
Channel catfish	*Ictalurus punctatus*
Bullhead/catfish sp.	*Ictalurus* sp.
Smallmouth buffalo	*Ictiobus bubalus*
Smallmouth/black buffalo	*Ictiobus bubalus/niger*
Bigmouth buffalo fish	*Ictiobus cyprinellus*
Buffalo sp.	*Ictiobus* sp.
Gar sp.	*Lepisosteus* sp.
Bluegill	*Lepomis macrochirus*
Sunfish sp.	*Lepomis* sp.
Turkey	*Meleagris gallopavo*
Spotted bass	*Micropterus punctulatus*
Largemouth bass	*Micropterus salmoides*
White/yellow bass	*Morone chrysops/mississippiensis*
Eastern woodrat	*Neotoma floridana*
White-tail deer	*Odocoileus virginianus*
Sheep/Goat	*Ovis aries/Capra hircus*
White crappie	*Pomoxis annularis*
Black/white crappie	*Pomoxis* sp.
Raccoon	*Procyon lotor*
Flathead catfish	*Pylodictis olivaris*
Squirrels	Sciuridae family
Pig	*Sus scrofa*
Swamp rabbit	*Sylvilagus aquaticus*
Eastern cottontail	*Sylvilagus floridanus*

Table 37. Nina Plantation Faunal Summary.

BLOCK	SEQUENCE	DESCRIPTION	RAW #	ADJUSTED #	WT (g)	WORKED	BUTCHERED	BURNED/ CALCINED	GNAWED
C	02	Early Str. 1 Interior	914	874	698	-	49	174	48
C	18	Early Str. 2 Interior	408	381	348.2	-	51	83	20
C	10	Early Exterior All	747	739	504.1	-	56	48	39
C	05	Late Str. 1 Interior	1313	1269	1041.4	1	128	78	113
C	16	Late Str. 2 Interior	524	511	1408.1	-	131	74	66
C	11	Late Exterior All	435	423	624.6	1	56	34	25
D	09	Earliest Midden-Core	179	165	92.9	-	11	1	6
D	08	Second Midden-South Wing/Core	676	657	355.1	-	50	6	22
D	10	Undiffer. Early Midden-South Wing/Core	97	87	126.8	-	7	-	3
D	05	Late South Wing/Core	692	662	1636.1	2	231	4	98
E	08	Earliest Midden-Core	3	3	25.1	-	2	-	-
E	15	(Early) Second (Red) Midden-Core	115	105	55.4	-	2	1	1
E	09	Late North Wing/Core	979	925	2823.7	-	242	8	86
E	16	Late North Wing-F.66	7	7	10.5	-	2	-	-

est percentage of burned/calcined bone was found in the interiors of Structures 1 and 2, where fireplaces or hearths also were located. The highest percentage (21.8 percent) was from the interior of Structure 2 in the Early period; the next highest (19.9 percent) was from the Early Structure 1 interior; and the third highest (14.5 percent) was from the Late Structure 2 interior.

General distributional patterns of the faunal remains are shown in Figures 138 and 139. During the Early period, faunal remains were concentrated in the Outbuilding complex (Block C), and in the area of the south wing of the main house (Figure 138). Few remains were recovered from the area of the north wing of the main house in Block E. During the Late period (post-1851), the distribution of faunal remains was far more widespread (Figure 139), with heavier deposition behind both the north and the south wings of the main house. In addition, faunal concentrations still were located in the Outbuilding complex. These distributional patterns are discussed in greater detail in the following section; interpretations are offered in Chapter X of this report.

Domestic and Wild Species

In general, domestic species contributed more of the total biomass than wild species (Table 38). Wild mammals contributed more to total biomass in the Early Structure 1 interior (8.4 percent). Wild birds comprised the highest percentage (2.0 percent) of wild remains in the Late Structure 1 interior, although a similar percentage (1.9 percent) was recovered from the Early period core of the main house. White-tail deer was recovered only from Block C, in the area associated with Structures 1 and 2; deer remains were present in the Early Structure 1 interior, Early exterior deposits around Structures 1 and 2, and in the Late Structure 1 deposits.

The reptiles and amphibians contributed the greatest percentage (10.7 percent) to the faunal collection from the Early period core of the main house in Block E, with the next highest percentage (9.0 percent) in the Early period core of the main house in Block D.

Fish contributed the greatest percentage to the diet in the Early period deposits on the exterior of Structures 1 and 2 (7.1 percent), although

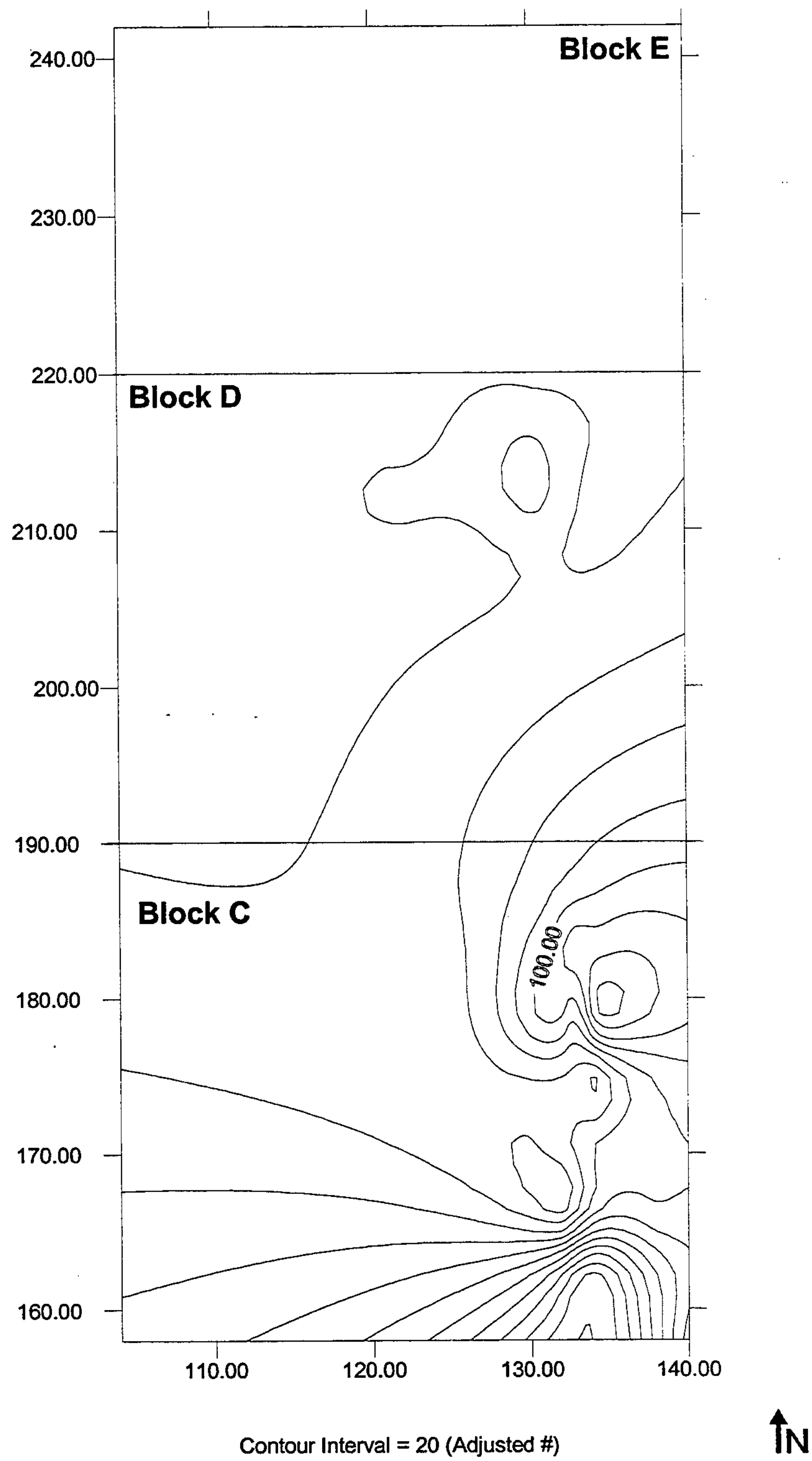

Figure 138. Distribution of faunal materials from the Early period in Blocks C, D, and E.

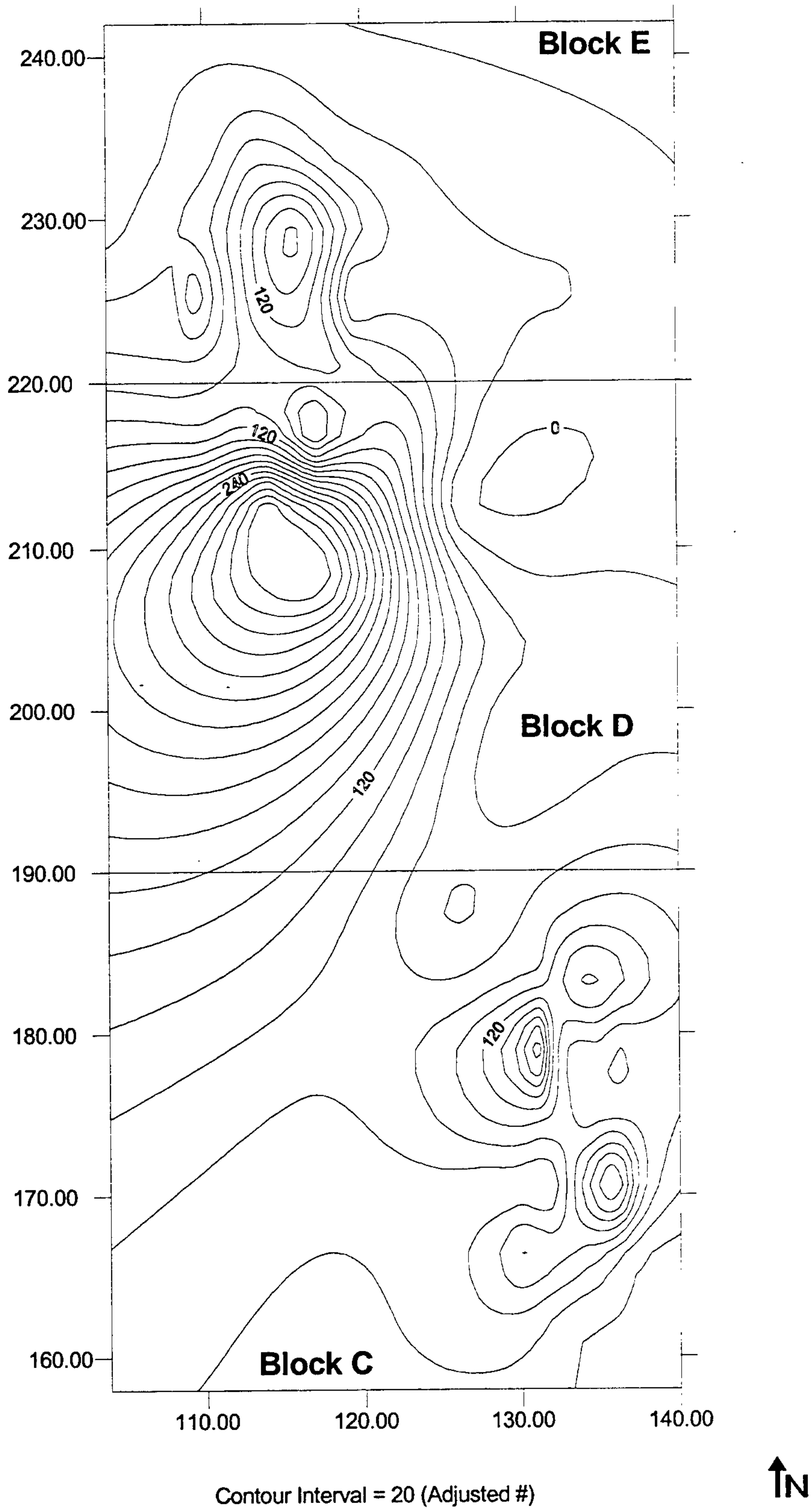

Figure 139. Distribution of analyzed faunal materials from the Late period in Blocks C, D, and E.

Table 38. Summary of Domestic and Wild Taxa by Provenience and Percentage of the Total Biomass.

BLOCK	DESCRIPTION	DOMESTIC MAMMAL %	DOMESTIC BIRD %	WILD MAMMAL %	WILD BIRD %	REPTILE/ AMPHIBIAN %	FISH %	INDETERMINATE % (WILD OR DOMESTIC)
C	Early Str. 1 Interior	54.2	0.4	8.4	0.2	1.2	5.8	30
C	Early Str. 2 Interior	39.7	0.4	2.1	0.2	3	6.1	48.9
C	Early Exter. All	42.6	1.8	6.2	0.2	1.1	7.1	40.9
C	Late Str. 1 Interior	52.1	1.8	4.1	2	0.4	5.3	34.7
C	Late Str. 2 Interior	53.7	0.2	0.2	-	2.3	1.8	42.2
C	Late Exter. All	44.2	0.4	0.9	-	2.5	1.4	50.6
D	Core-Earliest	1.4	3.5	-	-	9	<0.1	86.2
D	S. Wing/Core-2nd	53.8	4.1	1.1	0.4	1.2	2.4	37.1
D	S. Wing/Core-Undif.	69.5	2.1	-	<0.1	1.7	0.8	26
D	S. Wing/Core-Late	51.8	0.3	<0.1	0.3	1.3	0.2	46
E	Core-Earliest	-	-	4.1	-	-	-	95.9
E	Core-Early 2nd (Red)	3.9	2.9	1.9	1.9	10.7	4.9	73.7
E	Late N. Wing/Core	72.2	0.8	0.2	0.2	1	0.2	25.7
E	Late N. Wing-F.66	45.8	<0.1	-	-	-	-	54.2

fish contributed similar percentages to collections from the Early period interiors of Structures 1 (5.8 percent) and 2 (6.1 percent), and the Late period Structure 1 interior (5.3 percent). Fish contributed 4.9 percent of the biomass at the Early period core of the main house in Block E.

Table 39 provides percentage of biomass figures for domestic taxa, wild taxa, and indeterminate domestic/wild taxa. Proveniences with larger samples in which at least 50 percent of the bone could be identified as domestic or wild offered the most reliable data. These included all of the deposits associated with Structures 1 and 2; the Period 06 midden and undifferentiated deposits around the south wing and core of the main house; and, the Late period deposits associated with the south wing, north wing, and core of the main house. The contexts with the greatest dependence on domestic species were the Late period north wing and core of the main house (73.0 percent), the Early period undifferentiated deposits associated with the south wing and core of the main house (71.6 percent).

The highest percentage of wild species was found in the Early period interior of Structure 1 (15.6 percent), and the Early period exterior around Structures 1 and 2 (14.6 percent). The lowest percentage was found in the Late period north wing and core of the main house (1.6 percent), although the deposits associated with the Late period south wing and core had an analogously small percentage of wild species (1.8 percent).

Clearly, the use of wild species decreased through time, although wild animal consumption exhibited the least change in contexts from the interior of Structure 1. Deposits from the interior of Structure 2, and exterior deposits around Structures 1 and 2, reflected a sharp drop in the use of wild species during the Late period. There was a corresponding increase in domestic species in the Structure 2 deposits.

A much greater disparity between domestic and wild species was evidenced in the Early and Late deposits associated with the south wing and core of the main house. Though the Late period deposits of the south wing and core, the Structure 1 interior, and the Structure 2 interior all had similar percentages of domestic taxa, the south wing and core deposits revealed much lower incidence of exploitation of wild species. An even more pronounced dependence on domestic species was evident in Late period deposits associated with the north wing and core of the main house; this area reflected the lowest usage of wild species.

These distributions are illustrated in Table 40. From these data, it appears that refuse disposal during the Early period was most intensive south of the core, and outside the south wing of the main house. The Early period south wing and core deposits were very similar to those from the

Table 39. Domestic Taxa and Wild Taxa by Percentage of Total Biomass in Blocks C, D, and E.

Block C						
TAXA	EARLY STR.1 INTER. %	EARLY STR.2 INTER. %	EARLY EXTER. ALL %	LATE STR.1 INTER %	LATE STR.2 INTER %	LATE EXTER. ALL %
Domestic	54.6	40.1	44.4	53.9	53.9	44.6
Wild	15.6	11.4	14.6	11.8	4.3	4.8
Indeterm.	30	48.9	40.9	34.7	42.2	50.6
TOTALS	100.2	100.4	99.9	100.4	100.4	100
Total biomass(kg)	11.33	5.72	8.38	16.13	19.97	9.74

Block D				
TAXA	*CORE EARLIEST %	EARLY S. WING/CORE 2ND MID. %	EARLY S.WING/CORE UNDIFFEREN. %	LATE SOUTH WING/CORE
Domestic	4.9	57.9	71.6	52.1
Wild	9	5	2.5	1.8
Indeterm.	86.2	37.1	26	46
TOTALS	100.1	100	100.1	99.9
Total biomass(kg)	1.44	5.76	2.39	23.52

Block E				
TAXA	*CORE EARLIEST %	*EARLY CORE 2ND (RED)%	LATE NORTH WING/CORE %	*LATE NORTH WING F. 66
Domestic	0	6.8	73	45.8
Wild	4.1	19.4	1.6	0
Indeterm.	95.9	73.7	25.7	54.2
TOTALS	100	99.9	100.3	100
Total biomass(kg)	0.49	1.03	37.5	0.24

* Sample sizes are very small and/or > 50% of the bone was indeterminate domestic/wild.

Table 40. Domestic and Wild Taxa By Site Area, in Kilograms of Biomass, and Percentage of Total Biomass.

TAXA	EARLY						LATE					
	STR. 1 & 2 AREA		S. WING/CORE MAIN HOUSE		N. WING/CORE MAIN HOUSE		STR. 1 & 2 AREA		S. WING/CORE MAIN HOUSE		N. WING/CORE MAIN HOUSE	
	KG	%	KG	%	KG	%	KG	%	KG	%	KG	%
Domestic	12.2	48	5.11	53.3	0.07	4.6	23.76	51.8	12.25	52.1	27.43	72.7
Wild	3.62	14.2	0.48	5	0.22	14.5	3.13	6.8	0.44	1.9	0.58	1.5
Indeterminate	9.61	37.8	4	41.7	1.23	80.9	18.95	41.3	10.83	46.1	9.73	25.8
Biomass Totals	25.43	100	9.59	100	1.52	100	45.84	99.9	23.52	100.1	37.74	100

Structure 1 and 2 area in terms of importance of domestic species, although domestic species were slightly more important in the main house deposits.

Among the Late period deposits, the south wing of the main house was very similar to the Structure 1 and 2 area deposits in terms of the importance of domestic species; the north wing area of the main house revealed a much greater dependence on domestic species. However, both the south and north wings of the main house revealed a similar low dependence on wild species, compared to the greater dependence on wild species observed in the Structure 1 and 2 area.

Examination of chronological change revealed a slight increase in the proportion of domestic species, and a marked decrease in the importance of wild species, in the Outbuilding complex. In the south wing and core area of the main house, there was a very slight decrease in the use of domestic species, and a larger decrease in the use of wild species during the Late period. In the north wing and core area, there was a dramatic increase in the amount of bone refuse, suggesting that food refuse was not habitually deposited in that area until after the construction of the north wing after 1851.

Chronological Patterns in Faunal Remains

In terms of biomass, mammals constituted the most important animal class in both areas of the site (Table 41; detailed in Tables 42 - 44). Among Early period contexts, mammals contributed 82.2 percent (Block E), 85.4 percent (Block D), and 89.4 percent (Block C). These percentages increased markedly during the Late period. In deposits from the Late Main House complex, close to 97.0 percent of the biomass was from mammals, and in the Outbuilding complex deposits of the same period, that percentage was 93.0 percent.

In both the Main House and Outbuilding complexes birds played a larger role in the diet during the Early period than in the Late period. They were most important in the Early period core and south wing of the main house (10.4 percent in Block D and 7.2 percent in Block E). Birds contributed only 2.8 percent of the biomass in the Early period Outbuilding complex. A similar percentage (2.5 percent) of birds was evi-

Table 41. Animal Class Arranged by Temporal Period and Analytical Unit in Blocks C, D, and E.

CLASS	EARLY MIDDEN				LATE MIDDEN			
	MNI		BIOMASS		MNI		BIOMASS	
	#	%	KG	%	#	%	KG	%
Structure 1 and 2 Area								
Mammal	21	34.4	22.73	89.4	23	32.9	42.63	93
Bird	10	16.4	0.72	2.8	12	17.1	1.15	2.5
Rept/Amph	5	8.2	0.4	1.6	8	11.4	0.75	1.6
Fish	25	41	1.58	6.2	27	38.6	1.31	2.9
Totals	61	100	25.43	100	70	100	45.84	100
Core and S. Wing/ Main House								
Mammal	11	39.3	8.19	85.4	10	55.8	22.75	96.7
Bird	8	28.6	1	10.4	5	27.9	0.41	1.7
Rept/Amph	4	14.3	0.24	2.5	1	5.6	0.31	1.3
Fish	5	17.9	0.16	1.7	2	11.2	0.05	0.2
Totals	28	100.1	9.59	100	18	100.5	23.52	99.9
Core and N. Wing/ Main House								
Mammal	4	30.8	1.25	82.2	11	42.3	36.57	96.9
Bird	3	23.1	0.11	7.2	7	26.9	0.7	1.9
Rept/1Amph	3	23.1	0.11	7.2	1	3.9	0.37	1
Fish	3	23.1	0.05	3.3	7	26.9	0.1	0.3
Totals	13	100.1	1.52	99.9	26	100	37.74	100.1
GRAND TOTALS	**102**		**36.54**		**114**		**107.1**	

Table 42. Animal Class Arranged by Temporal Period, and Analytical Unit in Block C.

CLASS	EARLY MIDDEN				LATE MIDDEN			
	MNI		BIOMASS		MNI		BIOMASS	
	#	%	KG	%	#	%	KG	%
Kitchen Interior, Sequence 02								
Mammal	10	31.2	10.31	91	11	26.6	14.26	88.5
Bird	4	12.5	0.24	2.2	7	16.9	0.98	6.2
Reptile/Amphibian	2	6.2	0.14	1.2	2	4.8	0.05	0.4
Fish	16	49.9	0.64	5.8	21	50.9	0.84	5.3
TOTALS	32	99.8	11.33	100.2	41	99.2	16.13	100.4
Str. 2 Interior, Sequence 18								
Mammal	4	40	5.12	89.6	6	40.1	19.08	95.7
Bird	2	20	0.09	1.7	2	13.4	0.1	0.6
Reptile/Amphibian	2	20	0.17	3	3	20	0.46	2.3
Fish	2	20	0.34	6.1	4	26.8	0.33	1.8
TOTALS	10	100	5.72	100.4	15	100.3	19.97	100.4
Exterior All, Sequence 10								
Mammal	7	37	7.3	87.1	6	42.6	9.29	95.4
Bird	4	21.1	0.39	4.6	3	21.4	0.07	0.7
Reptile/Amphibian	1	5.3	0.09	1.1	3	21.4	0.24	2.5
Fish	7	37	0.6	7.1	2	14.2	0.14	1.4
TOTALS	19	100.4	8.38	99.9	14	99.6	9.74	100
Summary of All Early and Late Midden Totals								
Mammal	21	34.4	22.73	89.4	23	32.9	42.63	93
Bird	10	16.4	0.72	2.8	12	17.1	1.15	2.5
Reptile/Amphibian	5	8.2	0.4	1.6	8	11.4	0.75	1.6
Fish	25	41	1.58	6.2	27	38.6	1.31	2.9
TOTALS	61	100	25.43	100	70	100	45.84	100

Table 43. Animal Class Arranged by Analytical Unit in Block D.

CLASS	MNI		BIOMASS	
	#	%	#	%
Earliest Midden - Core, Sequence 09				
Mammal	3	42.9	1.2	83.4
Bird	1	14.3	0.11	7.7
Rept/Amph	2	28.6	0.13	9
Fish	1	14.3	<0.01	<0.1
TOTALS	7	100.1	1.44	100.1
Second Midden - South Wing/Core, Sequence 08				
Mammal	7	37	4.74	82.3
Bird	7	37	0.81	14.2
Rept/Amph	1	5.3	0.07	1.2
Fish	4	21.2	0.14	2.4
TOTALS	19	100.5	5.76	100.1
Indifferent Early Midden - South Wing/Core, Sequence 10				
Mammal	1	50	2.25	94.2
Bird	-	-	0.08	3.4
Rept/Amph	1	50	0.04	1.7
Fish	-	-	0.02	0.8
TOTALS	2	100	2.39	100.1

Table 43, continued

CLASS	MNI		BIOMASS	
	#	%	#	%
All Early Midden				
Mammal	11	39.3	8.19	85.4
Bird	8	28.6	1	10.4
Rept/Amph	4	14.3	0.24	2.5
Fish	5	17.9	0.16	1.7
TOTALS	28	100.1	9.59	100
Late Midden - South Wing/Core, Sequence 05				
Mammal	10	55.8	22.75	96.7
Bird	5	27.9	0.41	1.7
Rept/Amph	1	5.6	0.31	1.3
Fish	2	11.2	0.05	0.2
TOTALS	18	100.5	23.52	99.9

Table 44. Animal Class Arranged by Analytical Unit in Block E.

CLASS	MNI		BIOMASS	
	#	%	KG	%
Earliest Midden - Core, Sequence 08				
Mammal	2	100	0.49	100
Bird	-	-	-	-
Rept/Amph	-	-	-	-
Fish	-	-	-	-
TOTALS	2	100	0.49	100
Late Midden - North Wing (F. 66), Sequence 16				
Mammal	1	50	0.24	100
Bird	1	50	<0.01	<0.1
Rept/Amph	-	-	-	-
Fish	-	-	-	-
TOTALS	2	100	0.24	100
Early 2nd (Red) Midden - Core, Sequence 15				
Mammal	2	18.2	0.76	73.7
Bird	3	27.3	0.11	10.6
Rept/Amph	3	27.3	0.11	10.7
Fish	3	27.3	0.05	4.9
TOTALS	11	100.1	1.03	99.9
Late Midden - North Wing/Core, Sequence 09				
Mammal	10	41.8	36.33	97.1
Bird	6	25	0.7	2
Rept/Amph	1	4.2	0.37	1
Fish	7	29.2	0.1	0.2
TOTALS	24	100.2	37.5	100.3
All Early Midden				
Mammal	4	30.8	1.25	82.2
Bird	3	23.1	0.11	7.2
Rept/Amph	3	23.1	0.11	7.2
Fish	3	23.1	0.05	3.3
TOTALS	13	100.1	1.52	99.9
All Late Midden				
Mammal	11	42.3	36.57	96.9
Bird	7	26.9	0.7	1.9
Rept/Amph	1	3.9	0.37	1
Fish	7	26.9	0.1	0.3
TOTALS	26	100	37.74	100.1

dent in Late period outbuilding deposits, but the importance of birds dropped considerably during the Late period main house deposits (to 1.7 percent in Block D, and 1.9 percent in Block E).

Reptiles and amphibians, primarily turtle, were more prevalent in the Early period main house remains than in the Outbuilding complex. In the Late period, their percentages decreased at the Main House complex, but remained steady at the Outbuilding complex.

Fish were most prevalent in remains from the Outbuilding complex during both the Early and Late periods, although even there, fish decreased in importance through time. The percentage of fish remains at the Main House complex dropped considerably through time.

Percentages calculated using the minimum number of individuals (MNI) remain relatively stable for the Outbuilding complex during both periods; the greatest numbers of individuals were represented by fish and mammals, followed by birds, and then reptiles/amphibians. MNI counts for the Main House complex indicated that mammals were greatest in number during both periods, but that they increased in proportion through time. Counts of birds and fish remained relatively stable, but reptiles/amphibians decreased sharply through time.

In the Outbuilding complex, fish represented the largest number of individuals during the Early period (n=25), but they provided only 6.2 percent of the biomass; during the Late period (n=27), they provided only 2.9 percent of the total biomass. During both periods, mammals provided the highest percentage of total biomass, although the MNI was lower than that for fish. The MNI and biomass contributions of birds and of reptiles/amphibians remained relatively stable during the Early and Late periods.

Although the MNI for birds in the Main House complex approximated the bird MNI in the Outbuilding complex, birds constituted a higher percentage of the general MNI in the main house deposits than at the outbuildings. In the Early main house deposits, birds also contributed a greater percentage of the biomass than in the Outbuilding complex. During the Late period, birds represented a slightly higher percentage of the biomass in the Outbuilding complex than in the Main House complex.

Domesticated Animals

Table 45 provides a detailed summary of the percentages of total biomass represented by the different domestic species recovered from the site. Cattle were most frequent in the Late period north wing and core of the main house (55.2 percent of total biomass), but they also were important in the Early period deposits associated with

Table 45. Domesticated Animals by Provenience and Percentage of the Total Biomass.

BLOCK	DESCRIPTION	CATTLE %	PIG %	SHEEP/GOAT %	HORSE %	CHICKEN & CF. CHICK.	TURKEY %
C	Early Str. 1	30.5	23.7	-	-	0.4	-
C	Early Str. 2	-	39.7	-	-	0.4	-
C	Early Exter.	23.4	19.2	-	-	1.8	-
C	Late Str. 1	32.2	19.9	-	-	1.6	0.2
C	Late Str. 2	41	12.6	-	-	0.1	0.1
C	Late Exter.	32.8	11.4	-	-	0.4	-
D	Earliest Core	-	-	1.4	-	3.5	-
D	2nd S.Wing/Core	47.6	5.7	0.5	-	4.1	-
D	Und. S.Wing/Core	40.6	11.3	17.6	-	2.1	-
D	Late S.Wing/Core	23	21.8	0.2	6.8	0.3	-
E	*Earliest Core	-	-	-	-	-	-
E	2nd (Red) Core	-	3.9	-	-	2.9	-
E	Late N.Wing/Core	55.2	15.3	0.6	1.1	0.8	-
E	*Late N.Wing/F66	-	45.8	-	-	<0.1	-

* Very small sample sizes.

the south wing and core of the main house, and in the Late period deposits of the interior of Structure 2. Beef contributed one-fourth to one-third of the biomass in the Structure 1 interior, and in exterior deposits around Structures 1 and 2, during both periods; these biomass contributions also obtained for Late period deposits of the south wing and core of the main house. Beef increased in importance over time in both areas of the site.

The highest percentage of pig remains was found in Early period deposits from the interior of Structure 2 (39.7 percent). The Early and Late period Structure 1 interior, the Early period exterior deposits of Structures 1 and 2, and the Late period south wing and core of the main house, all had similar percentages of pig remains. Pig was least important in the Early period main house core in Block E (3.9 percent), and in the Early period deposits associated with the south wing and core of the main house in Block D (5.7 percent). Pig remains comprised a greater percentage of biomass in the Early period interiors of Structures 1 and 2 than in contemporaneous exterior deposits around those structures. The importance of pig decreased in the Outbuilding complex during the Late period, and increased in the deposits associated with the main house.

Sheep/goat remains were present only in deposits associated with the main house; these remains were derived primarily from Early period deposits around the core and south wing of the main house. While present in the Late period deposits to the south and north of the main house, sheep/goat contributed only small percentages of the total biomass there, suggesting a decrease in consumption of lamb/mutton time. Horse was represented only by two very worn teeth and an astragalus, or ankle bone. Horse was found only in the Late period deposits associated with the two cisterns.

Chicken was found in all areas of the site, but it was most prevalent in Early period deposits from the south wing and core of the main house. The importance of chicken appeared to decrease during the Late period in the Main House complex, but it remained relatively stable in its contribution to the diet in the Outbuilding complex. Turkey, either domestic or wild, was present only in very small quantities in Late period interior deposits of Structures 1 and 2.

Wild Mammals

Table 46 provides a detailed summary of the percentages of total biomass represented by the

Table 46. Wild Mammals by Provenience and Percentage of the Total Biomass.

BLOCK	DESCRIPTION	RACCOON %	RABBITS %	OPOSSUM %	DEER %	WOODRAT %	SQUIRREL %
C	Early Str. 1	0.4	1.1	-	6.9	-	-
C	Early Str. 2	-	0.5	1.6	-	-	-
C	Early Exter.	2.5	-	1.7	2	-	-
C	Late Str. 1	0.4	0.2	1	2.1	0.2	0.1
C	Late Str. 2	-	0.2	-	-	-	-
C	Late Exter.	0.1	0.7	-	-	0.1	-
D	Earliest Core	-	-	-	-	-	-
D	2nd S.Wing/Core	-	-	0.7	-	0.2	0.2
D	Undif. S. Wing/Core	-	-	-	-	-	-
D	Late S. Wing/Core	-	-	-	-	-	-
E	*Earliest Core	-	-	-	-	4.1	-
E	2nd (Red) Core	-	-	-	-	1.9	-
E	Late N. Wing/Core	-	-	-	-	-	0.2
E	*Late N. Wing/F66	-	-	-	-	-	-

* Very small sample size.

different wild species recovered from the site. White-tail deer was present only in Early and Late period deposits from the interior of Structure 1, and in the Early period deposits from the exterior of the outbuildings. Raccoons and rabbits (mostly swamp rabbits) were present only in the deposits associated with the interiors of Structures 1 and 2. Both generally decreased in importance through time. Opossum was present in the Outbuilding complex during both periods, and in Early period deposits associated with the south wing and core of the main house. Squirrels were present in both areas of the site.

Eastern woodrat remains were included in the analysis of wild species, although they probably represent a commensal species. Remains were present in both areas of the site, although they were more prevalent in the Early period deposits associated with the core of the main house (Block E). Eastern woodrat remains also were present in small amounts in the Late period Structure 1 interior, and in exterior deposits of the Outbuilding complex.

Wild Birds

Wild birds were present across the site; the recovered species and their proportionate biomass are should in Table 47. Waterfowl, represented by ducks and geese, were found in both areas of the site. They were most prevalent in the Late period Structure 1 interior (1.9 percent of the total biomass), and in Early period deposits associated with the core of the main house (Block E; 1.9 percent). Doves and/or pigeons occurred only in very small amounts, and only in the Early period exterior deposits of Structures 1 and 2, and in the Late period Structure 1 interior.

Reptiles and Amphibians

Turtles were the most abundant reptiles; they were found in both areas of the site, from both time periods (Table 47). They were most prevalent in Early period deposits associated with the core of the main house (9.0 percent in Block D and 9.7 percent in Block E). In the Outbuilding complex, turtle was prevalent in the Early period Structure 2 interior deposits (3.0 percent), but it also was present in the Late period Structure 2 interior (2.3 percent), and in the exterior deposits around Structures 1 and 2 (2.3 percent). Alligator was represented by only one skull fragment, recovered from the Late period exterior deposits associated with Structures 1 and 2. Frog, toad, and unidentified snake remains occurred in very small numbers in both the Outbuilding and the Main House complexes.

Fish

Fish were present across the site, but they clearly were most important in the Outbuilding complex (Table 48). Bowfin and gar were the dominant species in that area; bowfin also contributed 0.5 percent of the total biomass to the Early period deposits associated with the south wing and core of the main house. Gar was present in very small amounts in Early period deposits

Table 47. Wild Birds and Reptiles by Provenience and Percentage of the Total Biomass

BLOCK	DESCRIPTION	DUCKS & GEESE %	DOVES & PIGEONS %	TURTLES %	ALLIGATOR %
C	Early Str. 1 Inter.	0.2	-	1.2	-
C	Early Str. 2 Inter.	0.2	-	3	-
C	Early Exter. All	0.1	0.1	1.1	-
C	Late Str. 1 Inter.	1.9	0.1	0.3	-
C	Late Str. 2 Inter.	-	-	2.3	-
C	Late Exter. All	-	-	2.3	0.2
D	Earliest Core	-	-	9	-
D	Early 2nd S.Wing/Core	0.4	-	1.2	-
D	Undif. S. Wing/Core	<0.1	-	1.7	-
D	Late S. Wing/Core	0.3	-	1.3	-
E	*Earliest Core	-	-	-	-
E	Early 2nd (Red) Core	1.9	-	9.7	-
E	Late N. Wing/Core	0.2	-	1	-
E	*Late N. Wing/F. 66	-	-	-	-

* Very small samples.

Table 48. Fish Groups by Provenience and Percentage of the Total Biomass.

BLOCK	DESCRIPTION	BOWFIN %	GAR %	SUCKERS %	CATFISHES %	SUNFISHES %	DRUM %
C	Early Str. 1	0.4	0.2	0.4	1.5	0.2	0.8
C	Early Str. 2	-	-	-	0.6	-	2.5
C	Early Exter.	0.1	-	-	0.4	-	2.8
C	Late Str. 1	0.3	0.2	0.2	1	0.2	1.3
C	Late Str. 2	0.1	0.1	-	0.9	-	0.3
C	Late Exter.	-	-	-	<0.1	-	1.1
D	Earliest Core	-	-	-	-	-	-
D	2nd - S.Wing/Core	0.5	-	-	0.2	<0.1	-
D	Und. S.Wing/Core	-	-	-	-	-	-
D	Late S. Wing/Core	-	-	-	-	0.1	-
E	*Earliest Core	-	-	-	-	-	-
E	2nd (Red) Core	-	<0.1	-	-	-	1
E	Late N.Wing/Core	-	-	-	<0.1	<0.1	-
E	*Late N.Wing/F66	-	-	-	-	-	-

* Very small sample sizes.

associated with the core of the main house (Block E). Both species occurred in similar percentages in both Early and Late periods in the Outbuilding complex, although bowfin was slightly more important to the diet than gar.

Suckers occurred only in the Structure 1 interior deposits; they were present in both Early and Late period deposits. Catfish was more prevalent in the Outbuilding complex, although it also was present in small amounts in the Early period south wing and core of the main house (Block D), and in the Late period north wing and core deposits (Block E). Catfish comprised similar percentages of the diet in Early and Late periods in the Outbuilding complex.

Sunfish occurred in small amounts in deposits associated with the main house, and with the interior deposits of Structure 1. Freshwater drum contributed the greatest amount of biomass of any of the fish groups; it was most prevalent in the

Outbuilding complex. Drum decreased through time in the Structure 2 interior, and in exterior deposits around Structures 1 and 2; it increased slightly in popularity in the Structure 1 interior deposits. Drum also was found in the Early period deposits associated with the core of the main house (Block E).

Eggshell

Absolute numbers of eggshell fragments could not be compared between contexts, in large measure because the breakage of eggshells can inflate numbers used for comparisons. However, the presence and absence of eggshell was used for comparison (Table 49). Although both would have been interior locations (and therefore more likely to preserve eggshell fragments), eggshell was prominent in Structure 1 but absent from Structure 2. The Early period exterior deposits around Structures 1 and 2 contained no eggshell, and only a small amount was found in the Late period exterior deposits.

The deposits associated with the main house contained eggshell in both Early and Late period contexts, but it was not as prevalent there as inside Structure 1. Eggshell was recovered in the Early period south wing and core of the main house, and than in the Late period north wing and core. Much of the eggshell found at the site was probably from chicken eggs, although the presence of goose remains also leaves open that possibility.

Table 49. Eggshell Fragments (# of fragments) from Blocks C, D, and E.

INTERIOR			
EARLY		LATE	
STR. 1 #	STR. 2 #	STR. 1 #	STR. 2 #
86	0	103	0

EXTERIOR			
EARLY		LATE	
STR. 1 #	STR. 2 #	STR. 1 #	STR. 2 #
0	13	65	39

Butchering Evidence

Although the presence of head and foot elements do not necessarily indicate primary butchering, concentrations of head and foot bones might indicate areas where butchering was conducted. The location with the strongest evidence of primary butchering of cattle was the Late period Structure 2 interior, where 46.7 percent of the cattle cuts/portions were head and foot elements (Table 50). The location with the least evidence of primary cattle butchering was the Late period Structure 1 interior (8.3 percent were head and foot elements). There also was a decrease through time in the main house deposits.

More pig head and foot elements found throughout the site than cattle head and foot elements. The highest percentages of pig head and

Table 50. Head and Foot Elements as a Percentage of Total Elements for Each Species in Blocks C, D, and E.

BLOCK	DESCRIPTION	CATTLE % H&F	PIG % H&F	SHEEP/GOAT % H&F	HORSE % H&F	DEER % H&F
C	Early Str. 1 Inter.	33.3	23.9	-	-	-
C	Early Str. 2 Inter.	-	25	-	-	-
C	Early Exter. All	16.7	54.6	-	-	-
C	Late Str. 1 Inter.	8.3	23.9	-	-	-
C	Late Str. 2 Inter.	46.7	42.9	-	-	-
C	Late Exter. All	14.3	33.3	-	-	-
D	Earliest Core	-	-	tooth	-	-
D	2nd Mid.-S.Wing/Core	25	66.7	100	-	-
D	Unidif.-S.Wing/Core	50	66.7	100	-	-
D	Late S. Wing/Core	11.8	32.6	-	100	-
E	*Earliest Core	-	-	-	-	-
E	Early 2nd (Red) Core	-	tooth	-	-	-
E	Late N. Wing/Core	11.9	52	100	tooth	-
E	*Late N.Wing/F66	-	-	-	-	-

* Very small sample size.

foot elements were from the Early period exterior of Structures 1 and 2 (54.6 percent of the pig cuts/portions were head and foot elements), and the Late period remains from the north wing and-core of the main house (52.0 percent). Late period remains from the interior of Structure 2 also had a relatively high percentage of these elements (42.9 percent).

All but one of the sheep/goat elements were head or foot elements; the exception was one thoracic vertebra fragment from the Late period south wing and core of the main house.

Meat Cut Summary

In terms of the actual numbers of cuts/portions represented, there was a marked increase in beef cuts over time in both the Outbuilding complex and in the main house deposits (Table 51). Pork cuts remained relatively stable through time in the Outbuilding complex, but they increased dramatically during the Late period in the Main House complex. Sheep/goat cuts occurred infrequently, decreasing slightly through time in the main house deposits.

Detailed data on meat cuts and portions from each archeological context are provided in Appendix VII. In general, there was a mixture of medium to high quality cuts at the site, with some head and foot elements. The most dramatic change in meat cuts was seen in the south wing and core area of the main house. In the Early period, the beef cuts were of medium quality and included head and foot elements; in the Late period, the quality greatly increased, as did the variety of cuts. Pork cuts/portions were very limited and of medium quality in the Early period, with teeth and foot bones present; in the Late period, the cuts were of medium to high quality, with several steaks included. Sheep/goat cuts were represented only by teeth and foot elements in the Early period, but during the Late period, a shoulder/rack cut was present. The context with the highest quality beef and pork cuts, and by far the greatest variety of cuts, was the Late period north wing and core of the main house.

Summary

The artifactual material recovered from excavations at Nina Plantation (16PC62) was subjected to a variety of spatial, classificatory, and temporal analyses. These included the application of the Mean Ceramic Date formula (South 1977), use of the economic index developed by Miller (1980, 1991), distributional, functional, and formal analyses, and detailed faunal analysis. The results of these analyses have provided a great deal of information on changing activity patterns at Nina Plantation, and they have offered a characterization of the spatial patterns during the two major occupation periods.

These analytical results will be correlated with the field results, and the results of historical research, in the following chapter. A synthetic synopsis of the results of investigations at Nina Plantation, including architectural details, and spatial and temporal activity patterns will be presented in Chapter X. These then will be related to the occupants of Nina Plantation, providing a characterization of nineteenth century life along the Mississippi River.

Table 51. Summary of Meat Cuts (# of Cuts/Portions) in Blocks C, D, and E.

BLOCK	DESCRIPTION	CATTLE	PIG	SHEEP/GOAT	HORSE	DEER
C	Early Str. 1 Interior	9	21	-	-	2
C	Early Str. 2 Interior	-	8	-	-	-
C	Early Exterior All	6	11	-	-	1
C	Late Str. 1 Interior	12	21	-	-	1
C	Late Str. 2 Interior	15	14	-	-	-
C	Late Exterior All	7	6	-	-	-
D	Earliest Midden - Core	-	-	tooth	-	-
D	2nd Midden - S. Wing/Core	8	6	1	-	-
D	Undiff. S. Wing/Core	2	3	2	-	-
D	Late S. Wing/Core	17	46	1	1	-
E	Earliest Core	-	-	-	-	-
E	2nd (Red) Midden - Core	-	tooth	-	-	-
E	Late N. Wing/Core	42	50	1	tooth	-
E	Late N. Wing/F. 66	-	1	-	-	-

CHAPTER X

SUMMARY AND INTERPRETATION

Introduction

The preceding chapters of this report have described the results of archeological excavations at Nina Plantation (16PC62), in Point Coupee Parish, Louisiana. These data recovery excavations and subsequent analyses were conducted in 1993 and 1994, on behalf of the U.S. Army Corps of Engineers, New Orleans District. This chapter summarizes the results of this extensive project, and offers an interpretation of the collected data, with reference to the research design prepared for this project (Chapter VI).

The Architecture and Layout of Nina Plantation

Architectural data recovered from Nina Plantation have confirmed the use of documented vernacular styles and techniques, and illustrated the process of the adaptation of more general vernacular forms to the particularistic needs of the residents. Architectural changes and remodeling at the Main House and the Outbuilding complexes during the nineteenth century, and changes in the orientation and facade of the main house during the second half of the nineteenth century were allied both with local and regional events, and with the social milieu and cultural background of the occupants.

The layout of the plantation followed a generalized spatial pattern of Mississippi River sugar plantations (Goodwin et al. 1989), with the quarters for field slaves aligned in a double row at a distance from the Main House, with the industrial complex at a distance from the main house, but closer to the slave quarters, and with smaller service buildings (stables, smithy) located between the quarters and the main house. In addition to these plantation components, smaller domestic and service structures were in close proximity to the main house. According to a description of typical sugar plantation layout in the Caribbean, the big house was always accompanied by a detached kitchen, a "housekeeper's hut, and huts for servants" (Edwards 1994:179). It appears that this general pattern also prevailed at Nina Plantation.

While the plantation was a single social and economic entity, under the overall control of the plantation owner, that entity was shaped in large part by the varied social and cultural orientations of its occupants. These contributions to the ultimate form of the plantation can be discerned only by first considering the individual components.

The Main House Complex

The original core structure of the Main House at Nina Plantation was constructed in the 1820s by Jean Ursin Jarreau, a first generation Creole of French and local parentage. Jarreau was raised by his stepfather, a German by birth, and he was educated in Germany. He purchased the tract of land that was to become Nina Plantation in 1822, and married Octavine LeBlanc, a local Pointe Coupee woman, in 1823. At the time of purchase, there was no record of any extant structures on the land, and it is assumed that Jarreau and his wife were responsible for the construction of the original plantation buildings.

The original house at Nina, then known as Pecan Grove Plantation, was a rectangular structure measuring approximately 11.14 x 18.75 m (36.5 x 61.5 ft). It was raised on brick piers, and

there was no archeological evidence to suggest the existence of a finished ground floor. The height of the piers was tentatively calculated at between 5.2 and 7.2 feet above grade; these calculations estimated the rise of a stairway at the rear of the core structure, based on the in situ placement of a stairway footing.

While it is impossible to determine with certainty the form of the original house, comparison with contemporary plantation homes provides a general pattern for the structure. One of the most common architectural forms during the late eighteenth and early nineteenth centuries was the raised Creole plantation house. Depicted in a sketch by John Latrobe (Figure 140), this house form was raised off of the ground on piers, and had galleries or porches of equal depth surrounding the core rooms on at least one side, but often on all four sides. Filtered through the Caribbean colonies, this vernacular form was based on the Spanish Creole three-room module; the three core rooms then could be divided, partitioned, or expanded according to need (Edwards 1994).

The dimensions of these raised Creole houses varied, but generally the length and width were in a ratio that ranged from 1:1.5 to 1:3. According to a contemporary description of colonial plantation homes, the most common dimensions were approximately 48 to 50 feet (1:3) in length, and 16 feet in width; this did not count the additional width of the surrounding galleries, which were at least six to seven feet in width (Edwards 1994:177-178). The core structure at Nina Plantation fits well into this general raised Creole house vernacular. Assuming a three-room module with surrounding ten foot wide galleries, the dimensions of the block of three core rooms would have totaled 16.5 x 41.5 feet (1:2.5), close to the most common dimensions described. The orientation of the core structure - facing to the north, rather than directly towards the river - was unusual, but suggested the possibility of formal gardens in the area north of the house. The almost total absence of early period debris for a distance of more than 30 m (98.4 ft) to the north of the core, and the presence of significant early trash disposal beyond this point in Block F, support this hypothesis.

The stratigraphic sequence associated with the south wing of the main house suggested that the south wing had been constructed as a separate structure, rather than as an addition to the core. Its construction probably was contemporaneous with the building of the core. During excavation, two groups of brick piers were found associated with the south wing. The first comprised piers that had been constructed at the original occupation level, approximately 10.95 m NGVD. The second group was at a higher elevation, and were constructed on top of earlier occupation debris. The earliest piers would have supported a separate building with dimensions of approximately 16 x 38 feet, with an additional ten foot wide gallery facing the river.

The original purpose of this southern dependency remains conjectural, but material evidence suggests that it was used as a kitchen at least until it was attached to the core as a wing. The placement of the structure would not have been inconsistent with the location of a detached kitchen as a support structure for the main house; distributional patterns of ceramics and faunal materials from the early period support this conclusion. The distribution of window glass from the final destruction of the buildings at the site indicates that the windows of the south wing were not glazed, a detail that lends weight to the interpretation of the south wing as a service structure. The placement of the south wing created a rear yard to the main house, where activities associated with the maintenance of a household were conducted. Even after attachment of the south wing to the core, the placement of stairs in the ell formed by the two structures provided easy access to this rear service area, and to the cistern located there.

At some time between the initial construction of the main house and the south dependency and the flood of 1851, the southern structure was attached to the core structure, forming the south wing. Based on stratigraphic evidence and on the historical record, this remodeling effort is likely to have taken place in the 1830s or early 1840s, prior to Jarreau's death in 1847. The piers that were constructed to connect the two structures were stratigraphically distinct, and, as noted above, they were built on top of occupational de-

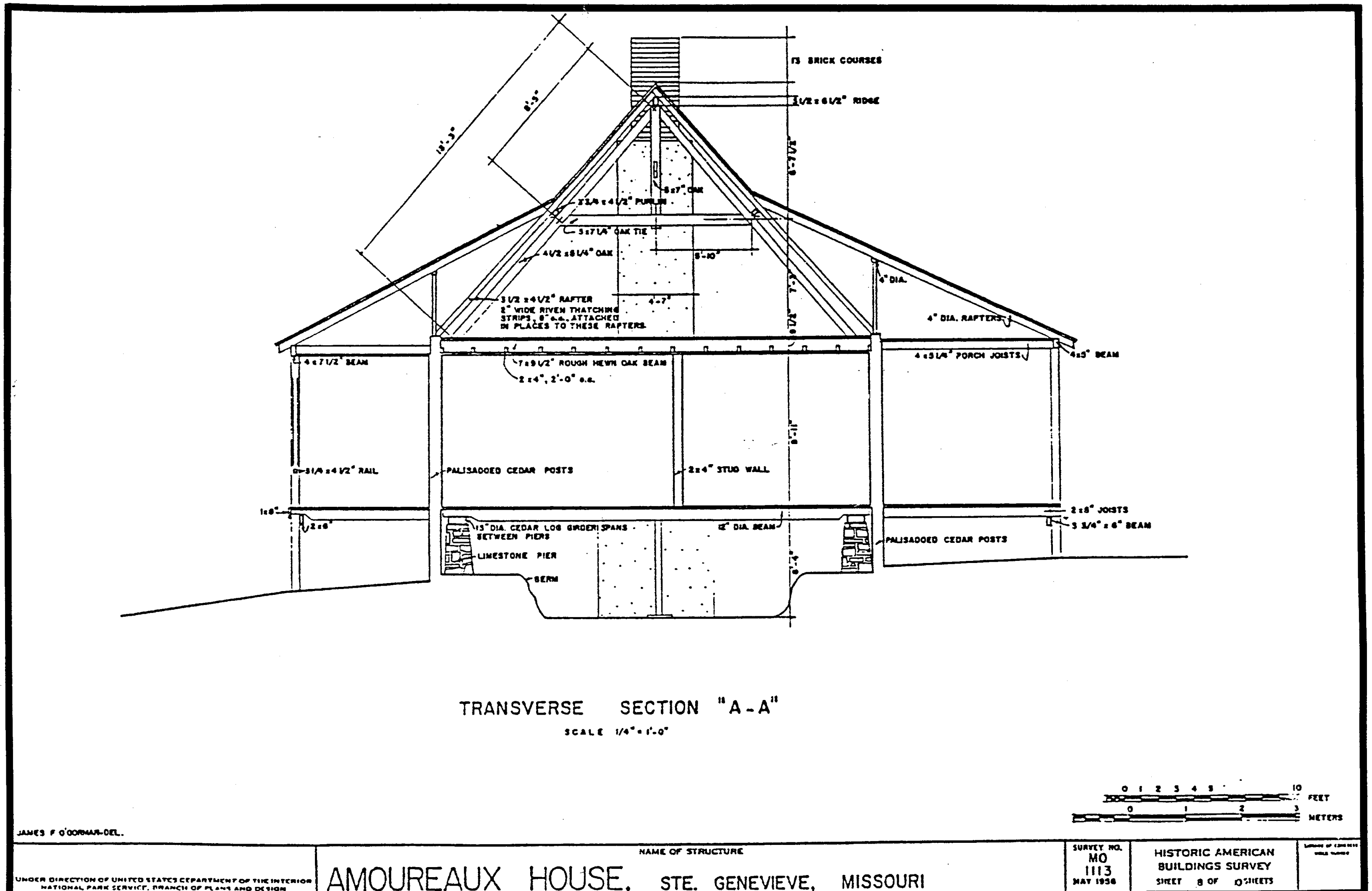

Figure 140. Transverse view of the Amoreaux House, Ste. Genevieve Missouri, showing the limestone piers used to support the independent flooring (United States Department of the Interior, National Park Service, Historic American Buildings Survey, Survey no. MO1113).

bris. The brick chimney foundation in the center of the core structure was not original, it probably replaced an earlier hearth and chimney at the time of remodeling. A surviving cedar timber was recovered in situ in the ell of the core and the south wing; it was interpreted as the basal support for stairs running to the newly attached wing. By calculating the angle of the rise of a stairway, the above ground height of the main house could be estimated. Assuming a normal rise, the house would have been approximately 1.6 m (5.2 ft) above grade. If a steep rise were assumed, the height of the piers of the main house would have been 2.2 m (7.2 ft). The stratigraphy associated with the cisterns that flanked the core of the main house suggested that they had been built at approximately the same time as the attachment of the south wing; they also were built on top of early occupation debris.

Jean Jarreau died in 1847, and his widow Octavine took over the tasks of running Pecan Grove Plantation. The Widow Jarreau remained at Pecan Grove until her death in 1856. During her tenure, in 1851, a severe flood devastated the sugar crops and inundated the plantation; the waters left behind a thick layer of sandy alluvium which permitted assignation of temporal periods to the occupation debris at the site. In 1857, Octavine LeBlanc Jarreau's heirs sold the plantation and 86 slaves to Charles W. Allen, a native of Philadelphia. While the flood does not precisely divide the Jarreau and the Allen tenures at the plantation, it approximates them reasonably well. As if to illustrate the relative precision of the correspondence between flood and change in ownership, a brass stencil bearing the inscription "PECAN GROVE; J U J" was recovered from an excavation unit under the core of the main house, where it had been discarded (Figure 141). Its stratigraphic position placed it just above the flood deposit.

The north wing of the main house was constructed after the flood of 1851. A precise date is not possible, but it seems likely that it was built prior to the Civil War, when economic conditions were move conducive to tasks of that nature. The north wing was a mirror image of the attached south wing, and even included a fireplace in the same position as in the south wing. The stratigraphic sequence associated with the north wing, however, made clear that its construction postdated the flood of 1851. Thus, it seems likely that the north wing of the main house was built by either Charles or Alexander Allen, to whom Charles had sold the plantation in 1860. Both of the Allens were from Pennsylvania, and they clearly must have had different interpretations of the appropriate nature of a plantation dwelling. Jarreau had built his home following the local vernacular, and according to the same common practice, he had attached the south wing as the needs of a growing family dictated. All indications were that the main house itself originally had been oriented with its facade facing north, rather than towards the river; the south wing later formed a rear attachment. The addition of the north wing involved the complete reorientation of the house facade towards the river. The addition of the north wing provided Georgian symmetry to what had been a rather organic French Creole structure. It is far more likely that non-native owners from Pennsylvania, i.e., the Allens, would have carried out such a reorientation.

Historical records add some weight to the conclusion that the Allens had been responsible for the remodeling. The sale price for the estate when it was purchased by C.W. Allen in 1857 was $116,000. Only three years later, when Charles Allen sold it to Alexander Allen, the price had risen to $180,000. While excellent sugar crops no doubt played some part in this large increase, it also is likely that improvements to the aging structures at Nina Plantation affected its high valuation.

The Outbuilding Complex

As described previously, the two outbuildings investigated during data recovery excavations were part of a small complex of four structures depicted on the 1883 Mississippi River Commission map. Severe erosion had claimed the other two of these outbuildings, although they probably were similar in type and function. Evidence suggests that the two outbuildings investigated at Nina Plantation had been used as dwellings. The occupants are likely to have been slaves employed in a domestic capacity by Jarreau and his family, and after emancipation, by servants

Figure 141. Brass stencil bearing the legend, "PECAN GROVE / J U J" (FS 1760).

fulfilling similar tasks for the Allens. In addition, it is possible that Structure 1 was used as a food preparation site for the main house during at least part of its occupation span. Other support services probably were conducted at the complex; the strongest evidence for butchering at the plantation was recovered from Structure 2.

Structures 1 and 2 in the Outbuilding complex were constructed using earthfast techniques common in the French colonial vernacular. Both had been built *sur solle* (on ground-laid sills), either with *poteaux sur solle* (post on sill) or upright plank construction (Kniffen and Glassie 1986:164). The only remaining evidence of these sills consisted of shallow depressions in the ground, caused by the compression of the underlying soils by the weight of the sills. The majority of the sills had been removed at the time of destruction circa 1883 - 1890. Based on the configuration of the sills, the exterior dimensions of Structure 1 were approximately 16 x 32 ft (4.9 x 9.8 m). The dimensions of Structure 2 were more difficult to ascertain; a reasonable approximation would be 21 x 37 ft (6.4 x 11.42 m).

Structure 1 had been equipped with a central chimney and hearth constructed with large upright timbers set into the ground as a framework. The chimney had been plastered with daub, or *bousillage*, the remains of which were found during excavations. The hearth itself was packed clay, which showed evidence of fire-reddening, i.e., thermoclastic alteration. Structure 2 had no evidence of a central hearth or chimney, but a small circular firepit (Feature 152) was recorded during mitigation. Structure 2 had a central, north-south partition wall constructed using *piquette en terre* or *pieux en terre* methods (Kniffen and Glassie 1986: 124); a narrow trench held close-set wooden stakes pounded directly into the ground. Both Structures 1 and 2, as originally constructed, had dirt floors. Some evidence of a porch or gallery was identified at Structure 1; this gallery faced to the south, towards the yard between Structures 1 and 2. Structures 1 and 2 had not been furnished with window glass.

Based on the stratigraphic sequence in Block C, the outbuildings were contemporaneous with the core and south wing of the main house, built circa 1820 - 1830. There was no evidence of any previous occupation or activity in the vicinity, and the elevation of the base of the sills was approximately 10.95 m NGVD, correlating with the elevations of the pier bases at the core building and the south wing.

Structure 1 was remodeled during the course of the nineteenth century. While the dates for this activity are not as clear as the dates for the attachment of the south wing, it is likely that the remodeling took place after the flood of 1851. During the remodeling, the wood and clay chimney and the clay hearth were replaced with a substantial, H-shaped brick chimney, and a plank floor was added to the building. No similar remodeling appeared to have taken place at Structure 2.

The brick chimney was built directly on top of the debris from the destruction of the wood and clay chimney. It was constructed from reused, salvaged bricks, many of which were broken, or which retained mortar from their previous use. The plank floor was constructed as an interior addition independent of the original walls of Structure 1. A system of ground-set posts, placed on the interior of the sills, probably supported the floor beams (J. Edwards, personal oral communication, November, 1995). An extant example of this type of independent floor construction was found in the late eighteenth century Amoureaux House, in Ste. Genevieve, Missouri (Figure 142). Built by Felix Amoureaux, a free man of color, the Amoureaux house was equipped with limestone piers as supports for the floor beams (Historic American Buildings Survey, no. MO1113).

Discussion

Archeological and archival research at Nina Plantation have demonstrated the existence of a typical sugar plantation layout, as described by Goodwin et al. (1989). The scope of this mitigation did not permit the archeological investigation of the industrial or the slave quarter components of this pattern, but excavations in the area of the main house and its dependencies provided evidence of a fluid and dynamic landscape (Stewart-Abernathy 1986) reflective both of economic and social circumstances and of changes in plantation ownership.

The orientation of the main house during the Jarreaus' tenure was to the north, rather than facing the river. It is likely that the house faced a garden or similar formal space; an almost total absence of material debris to the north of the main house suggested a separation, both physical and functional, of that space from the daily household activities. The south, or rear yard of the main house contained abundant evidence of daily life; the later attachment of the south wing did little to change patterns of activity in the rear yard.

The Outbuilding complex presented a stark contrast to the area of the main house. The buildings faced each other across a yard, and the small complex presented its back to the main house. The outbuildings were not raised above grade on piers, and they were provided only with dirt floors. Only Structure 1, the kitchen, was equipped with a chimney and hearth, and the original hearth had been constructed of wood and clay. No evidence was found that would have suggested glazed windows in either outbuilding.

The location of these dwellings, and the likely domestic tasks assigned to their residents, implied a close working relationship with the Jarreau family. However, the orientations of the outbuildings and the main house - facing away from each other - suggest a complex relationship. According to one scholar, "the plantation landscape was characterized by a complex series of separations, disjunctions, and denials. It embodied contradictory attempts to control the slaves, and simultaneously to render them invisible" (Epperson 1990:32). As in any relationship, though, the feeling may have been mutual. The orientation of the outbuildings towards one another, despite their location in the shadow of the owner's dwelling, implies the existence of a community distinct from that in which the planter participated. Mintz and Price (1992) elaborated on the development of these interdependent communities in their study of the development of African-American culture. In their model, "the institutions created by the slaves to deal with what are at once the most ordinary and most important aspects of life took on their characteristic shape *within* the parameters of the masters' monopoly of power, but *separate from* the masters' institutions" (Mintz and Price 1992:39). The relationship between these separate but interdependent social and economic spheres are explored in greater depth in the following section.

The change in ownership of Nina Plantation during the second half of the nineteenth century greatly affected the layout of the main house complex. The addition of the north wing to the main house necessitated the reorientation of the facade of the main house, and provided symmetry to the structure. This reorientation is likely to have been carried out shortly after the purchase of the estate in 1857, and certainly prior to the Civil War. Possibly as part of a general cleanup of the area around the main house, Structure 1 in the outbuilding complex also was remodeled, receiving a raised plank floor and a brick chimney. Unfortunately, it is not possible to date this remodeling effort precisely; it also may have taken place after Emancipation. Postbellum renovations carried out by the residents of Structure 1 would offer an explanation for the reused bricks, and for the lack of remodeling efforts at Structure 2.

The Material Assemblage of Nina Plantation

Analysis of moveable material remains recovered from Nina Plantation included comparisons between the Main House subassemblages and the Outbuilding complex during both the early (pre-1851), and late periods (post-1851). Diachronic comparisons within each complex tracked internal change. Analytical methods included the use of the ceramic means index (Miller 1980, 1991), the analysis of ceramic vessel forms, distributional analyses, and functional analyses. Simple identification of status was not a priority; in a situation where legal status is documented historically, a primary focus on status within the plantation community would have been redundant. Rather, analysis was intended to generate an independent data set that would permit the description of material patterns. Because the ethnic affiliations and legal status of the planters and the slaves/servants were documented historically, the unique material patterns associated with each of these groups could be compared and contrasted, offering insight into the relationships of status and power that existed between the

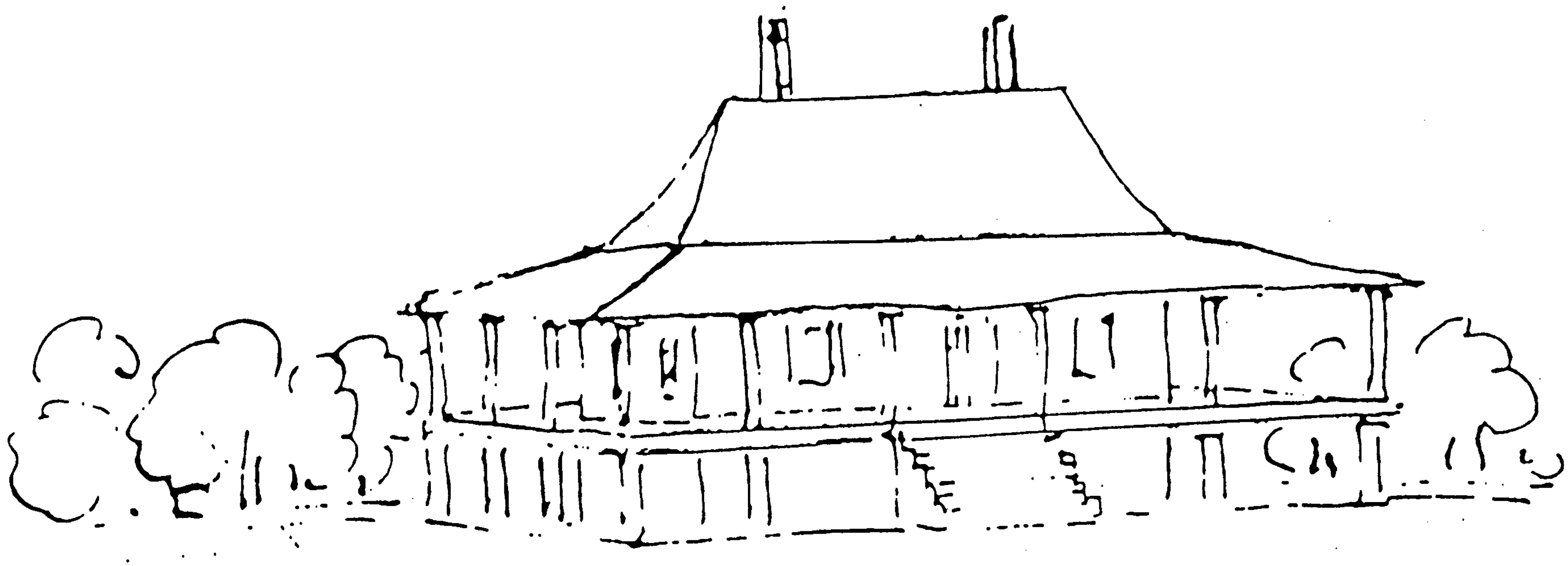

Figure 142. John Latrobe's sketch of a raised plantation house, circa 1834. From John Latrobe, Southern Travels: Journal of John H.B. Latrobe, 1834, ed. Sam Wilson (New Orleans: Historic New Orleans Collection, 1986; cf. Edwards 1994).

various communities. In addition, the temporal control afforded by the presence of the 1851 flood stratum permitted the identification of changes in material patterns associated with Emancipation, and with the change in ownership of the plantation.

Distributional Patterns

Patterns of artifact distribution and disposal at Nina Plantation permitted identification of activity areas during the plantation's seventy year occupation span. One of the most striking patterns was evidenced by the almost complete absence of cultural materials north of the main house during the early, pre-1851 period. This absence contrasted with a concentration of ceramic, glass, and faunal remains in Block D, associated with the south wing of the main house, deposited both prior to and after its attachment to the main house. This rear yard locus of activity continued throughout the century, although the character of the assemblage changed slightly during the latter half of the century, when concentrations were diffused within three loci: the outbuildings, the south rear yard of the main house, and the north rear yard of the main house. This north rear yard was formed by the addition of the north wing in what had formerly been a low-activity area.

Changes in the distributional patterns of ceramics and faunal materials in the areas of the south wing and the outbuildings suggested that during the later (post 1851) period, while the south rear yard of the main house continued to be used for domestic chores, more food-related activities were shifted to the outbuildings and to the newly constructed north wing area. While food related artifacts, as a proportion of the entire assemblage, decreased at the Outbuilding complex during the late period, this change reflected a more widespread transition in the entire assemblage, rather than a decrease in the number of food related artifacts; the actual numbers of food-related artifacts increased from 423 to 615 during the late period. The distribution of bottles also corroborated this general pattern. During the early period, the vast majority of beverage, pharmaceutical, and food storage bottles were discarded in the south yard of the main house (58 percent), and in the Outbuilding complex (33 percent). By the late period, this distribution had shifted dramatically. Only 13 percent of all recovered bottles were found in the south yard, while bottles in the Outbuilding complex had increased to 48 percent of the total, and the area surrounding the north wing showed an increase of 30 percent. These distributional patterns support the hypothesis that the Allens used the north wing for food-related activities, probably dining, and that the remodeling of Structure 1 included equipping the building for more intensive use as a kitchen facility.

Distributional analysis of faunal remains identified concentrations in the south yard area and in the Outbuilding complex during the early period. A very small proportion of the faunal debris was recovered from the area north of the main house. During the late period, faunal remains were concentrated behind both the north and the south wings, and in the Outbuilding complex. The strongest evidence for butchering activities was found in the Outbuilding complex, where during the late period, 46 percent of the remains from Structure 2 were head and foot elements.

Patterns of Ethnicity

Many recent studies of plantation sites have attempted to identify material evidence of African-American identity; most of these studies have not succeeded because they limited their search to "Africanisms" or "tangible evidence of stylistic continuity" (Howson 1990:79). Leland Ferguson's recent study of African-American material culture (1992) succeeded in demonstrating continuity in culturally specific material function, despite changes in material form. Wilkie's recent thoughtful investigation of African-American history and material culture at Oakley Plantation in Louisiana (Wilkie 1994) was able to define discrete African-American material patterns that exhibited both continuity and congruity with the oral historical record and the broader ethnographic record (Wilkie 1994), despite the fact that these assemblages were composed of artifacts no different than those found in typical European-American contexts. Wilkie convincingly argued that these artifacts were subject to very different patterns of use and

distribution in African-American contexts than in European-American contexts. So, while both subassemblages comprised individual artifacts that were not inherently distinctive, the proportions and distributions of the grouped artifacts displayed significant differences.

At Nina Plantation, the Main House complex (planter) subassemblages originated from the Jarreau family and the Allen family tenures; these two subassemblages exhibited slight differences in composition, distribution, and frequency that could be attributed either to temporal changes or to differences in cultural preference. Despite these minor differences, the planter subassemblages were far more similar to each other than to the subassemblage from the Outbuilding complex, which displayed distinctive distributional patterns of faunal, ceramic, and personal artifacts. These material patterns, discussed in more detail below, appear to be part of a broader cultural expression of the African-American community at Nina Plantation.

One of the most distinctive differences was in ceramic form. While bowls comprised a sizable portion of the ceramics across the site, they formed a larger proportion (41.4 percent) of the subassemblage from the outbuildings than from the main house (27.7 percent). This pattern was similar to that found at the Nina Quarters during Phase II investigations (Yakubik 1994), where bowls comprised 33.7 percent of the assemblage. At the Ashland-Belle Helene slave cabins (Yakubik 1994), the proportion of bowls in the ceramic assemblages averaged 25.9 percent, lower than at Nina's main house. The proportion of plates at the outbuildings was similar to that at the main house (42.2 percent); at the quarters, however, plates constituted a smaller proportion of the ceramic assemblage (36.2 percent) (Yakubik 1994). Temporal analysis showed a decline in the proportion of bowls at both the main house and the outbuildings, and an increase in the proportion of plates at the outbuildings. During the late period, the proportionate distribution of vessel forms at the outbuildings approximated that at the main house. Rather than attributing this increasing similarity of vessel forms to wholesale changes in the dietary patterns of African-Americans, as has been implied in other studies, e.g., Wheaton and Garrow (1985), Wilkie connects this change to the increasing similarity of European-American and African-American diets during the nineteenth century (Wilkie 1994:231). Similar diets that focused on gumbo, bisque, and etoufee, for example, would have created similar proportional patterns of plates and bowls (Wilkie 1994:232).

Dietary data generated during faunal analysis suggest that wild species, including deer, rabbits, squirrels, opossum, raccoon, waterfowl, doves, and various species of fish, played a far greater role in the diet of the outbuilding residents than in the diet of the planter families. While fish were prevalent in both the main house and in the outbuildings, there was a greater reliance on fish in the outbuildings than in the main house, and a greater variety of species was exploited. Fishing weights and an iron trap recovered from the Outbuilding complex attest to the exploitation of wild resources. During the late period, while reliance on wild species declined overall, the occupants of the outbuilding complex still depended to a greater extent on wild species than did the Allen family. Cattle, pigs, and domestic fowl were the most common domestic species at both the outbuildings and the main house. Distributional analysis suggests that the Allens had a preference for beef, while the Jarreau family's tastes were more eclectic and included pork, caprine species, beef, and wild species. Some beef was consumed at the Outbuilding complex, but the majority of domestic remains were pig. Butchering evidence revealed a number of head and foot elements in the south rear yard of the main house, and in the Outbuilding complex during the early period. These can be interpreted either as evidence for butchering in these areas, or as evidence of the poorest quality cuts being utilized by the slaves and servants employed in the south wing kitchen, and living in the outbuildings. In general, meat cuts throughout the site were of medium to high quality, with the highest quality and greatest diversity being found in the late period deposits from the north wing and core of the main house. The poorest quality cuts were recovered from the early period south wing and core; the faunal evidence from the south wing indicates a general increase in quality during the late period. This increase in quality

also extended to the Outbuilding complex, where the number of beef cuts increased, and the general quality of cuts improved during the late period. Despite this improvement, the quality did not equal that of the north wing during the late period. Appendix VII presents a detailed discussion of the faunal data.

Comparisons between the Nina Plantation faunal data and other Louisiana plantation sites indicate some similarities, although in general, pattern is difficult to discern. At Orange Grove Plantation (Weinand and Reitz 1992), both domestic and wild species were exploited, and were present in slave and planter assemblages. At Ashland-Belle Helene Plantation (Yakubik et al. 1994) only slave proveniences were investgated; these also produced a variety of wild and domestic species. However, examination of the data from these and other Louisiana plantation sites suggest that the proportions of wild and domestic taxa do not seem to be directly correlated to status (Yakubik et al. 1994:11-40). At Orange Grove Plantation, both the planter's house and the quarters showed similar percentages of wild (17.1 percent planter; 16.3 percent slave) species, but the planter's house had a higher proportion of domestic species (28.6 percent planter; 12.2 percent slave). At Ashland-Belle Helene, where two slave cabins were excavated, there were significant proportional differences between the two faunal assemblages, suggesting that there was not a direct relationship between slave status and the exploitation of wild species. At Orange Grove, as at Nina, the exploitation of fish appears to have been higher among slave populations than among the planters. Fish at Orange Grove comprised 16.3 percent of the total MNI at the quarters, while they formed only 8.6 percent of the total at the planter's house (Yakubik et al. 1994:11-14). At Ashland-Belle Helene, the proportions of fish varied from only 6.1 percent at Cabin 2 to 22.5 percent at Cabin 1 (Yakubik 1994). It is possible that more extensive excavations at both slave and planter sites, along with greater temporal control, may provide some additional clarification of faunal patterning. For example, at Nina Plantation, there seems to have been a distinction between the late period occupation of the main house by the Allens, and the earlier Jarreau occupation. During the early period, wild species formed a greater proportion of the total at the main house; after the Allens took possession, the proportion of domestic species increased, with a concurrent drop in the number of wild species. Late period outbuilding percentages indicate some decline in the number of wild species, but to a far lesser extent than at the main house.

Some of the most provocative material patterns at Nina Plantation were evidenced in the personal items recovered from the Outbuilding complex. These correspond closely with patterns described by Wilkie for the African-American occupants of Oakley Plantation (1994). Artifacts used for personal adornment were some of the most ubiquitous found in the Outbuilding complex. A large number of buttons were recovered from the site (n=656). The majority of these (n=402) were found in the late period Outbuilding Complex. Although the number representing the early period was far smaller (n=88), 78 percent of these buttons also were recovered from the Outbuilding complex. Only 38 glass beads were recovered from the site, but 28 of these were from the Outbuilding complex. Fourteen pieces of jewelry, including rings, brooches, pendants, and earrings were recovered from the area of the outbuildings; 11 of these were from late period deposits, as were parts of four gold watches. Three pendants made from alligator teeth were recovered; two were from the late period Outbuilding complex, and one was from the rear yard of the north wing.

A case for the use of buttons as a form of adornment has been made by Yentsch (1994), who cites numerous ethnographic examples of the use of buttons as necklaces, bracelets, and anklets. High concentrations of buttons have been found at other African-American sites, including Oakley Plantation, but as Wilkie demonstrates, they may be only part of a larger cultural expression (Wilkie 1994:257) that includes all types of artifacts useful for personal adornment. The jewelry, beads, and buttons may be the only archeological survivors of a larger expression that included bright colored clothing, hair plaiting, hats, and shoes. Roderick McDonald, in his documen-

tary study of the economy and material culture of Louisiana slaves (1993), cites numerous examples of slaves using their disposable income or credit to purchase silk dresses, fur hats (1994:150), fine shoes, and other accoutrements, in addition to more mundane items. The high proportion of items of personal adornment at the Outbuilding complex, and the almost total absence of these items from the main house, lends weight to Wilkie's hypothesis.

Wilkie also identified a complex of artifacts that may have been used for "spiritual" purposes, including chipped glass, saint's medallions, coins, and Native American lithic artifacts (1994:265-267). While a saint's medallion was recovered from the Outbuilding complex, and five of the six coins recovered from the site were found at the outbuildings, it is difficult to assign these to a spiritual function. Yakubik (1994) included numerous personal items in this category, despite the fact that such items could easily have been used for other purposes. Even mosquito netting rings were included as potential "ritual" items (Yakubik 1994:10-75). However, Newbell Puckett, writing of the "folk" beliefs of African-Americans (1926), concluded that most items could be used for curing and conjuring, depending on the whims of the individual (1926). Rather than including all potential items in the spiritual category, it probably is more useful to remain aware of that potential, but to include artifacts in this category only if warranted by their specific archeological contexts and associations.

Other personal items recovered from the Outbuilding complex, but not found in appreciable numbers in the Main House complex, included tobacco pipes, porcelain doll parts, and slate pencils. These all have been cited as distinctive parts of the African-American assemblages identified at Oakley Plantation (Wilkie 1994), and at other African-American sites such as Ashland-Belle Helene (Yakubik et al. 1994), Cannon's Point (Otto 1984), and Yaughan and Curriboo (Wheaton and Garrow 1985).

While the majority of these items peculiar to the Outbuilding complex were recovered from the late period deposits, they also were present during the early period. An increase in disposable income and in the ability to participate in the larger economy may have been responsible for the increase in the numbers of these items in the outbuilding subassemblage. While the numbers, and perhaps the quality of these items increased, the nature of the assemblage remained relatively constant.

Discussion

Statistical and distributional artifact analyses have illuminated several differences in the assemblages from the main house and the outbuilding complex. Like John Otto's results at Cannon's Point Plantation (1984), significantly higher numbers of hollow vessels were recovered from the Outbuilding complex than from the main house complex. The majority of these hollow forms were small bowls. During the late period, these differences waned, and the proportions of the vessel forms in the outbuilding assemblage came to approximate those of the main house.

Summary

Archeological excavations at Nina Plantation (16PC62) have provided a large amount of data relating to architectural form, material culture, and dietary patterns at this nineteenth century plantation. Three social/cultural components and two discrete time periods were represented. The Main House complex originally was built by Jean Ursin Jarreau, a Creole; it was sold in 1857 to Charles Allen, and shortly after to Alexander Allen, both natives of Pennsylvania. Because of spatial separation, and the excellent stratigraphic clarity at the site, it was possible to track architectural and material changes at the Main House complex that were associated with the different owners. At the Outbuilding complex, a clear shift in architecture and material culture accompanied Emancipation, and perhaps also had roots in the change of ownership. Lack of documentation makes the sequence of occupants at the Outbuilding complex less certain, although it is possible that the same people were resident throughout much of the study period. Jarreau's estate included the slaves, who may have maintained their positions and residency during the Allen tenure, and into the later nineteenth century.

The original architecture of the plantation main house and the outbuildings was based in the French colonial vernacular, and was typical of other sugar plantations along the Mississippi River. The Main House was a raised Creole structure, probably with galleries on four sides. It was oriented with its facade to the north. Behind it was a separate dependency, oriented with its gallery facing the river. This dependency was attached 15 - 20 years after original construction, and it became integral to the main house. The south dependency, or south wing, appears to have functioned in a service capacity, possibly as a kitchen. Remains in the south rear yard comprised quantities of discarded faunal remains, ceramics, bottles, and other items associated with food preparation and serving.

The two outbuilding structures in Block C were constructed approximately contemporaneously with the main house. These structures were earthfast, built on ground-laid sills with dirt floors. Structure 1 was equipped with a fireplace and chimney made of wood and clay. Structure 1 also served in a food service capacity. While early period ceramic distributions indicate that the major concentrations of ceramics emanated from the south wing of the main house, enough material evidence was present at Structure 1 to show that it was used as a kitchen. It is possible that during this early period, the Structure 1 kitchen served the household staff, or fulfilled some of the primary processing and cooking, with secondary functions being conducted at the south wing.

The sale of the estate, in 1857, to C.W. Allen ushered in a period of major change at Nina Plantation. The Allens, from Pennsylvania, had not been raised in the local Creole traditions. One of the first steps they took was the remodeling of the main house. This entailed adding a mirror image of the south wing onto the north side of the house, effectively changing the orientation of the facade from the north to the east, facing the river. They also appear to have added some form of dining facilities to the north wing; material remains from the yard area to the west of the north wing contained faunal remains, ceramics, and other food related items.

Structure 1 in the Outbuilding complex was remodeled soon after the Allens took possession of Nina Plantation. This may have been carried out by the Allens as part of a general refurbishment, or by the residents of Structure 1 after Emancipation. Numbers of food related artifacts increased during the later period at Structure 1, although the overall proportion decreased. This proportionate decrease was caused by an increase in other artifact categories. A material pattern indicative of a kitchen continued to be manifest in the late period deposits. Ceramic distributional patterns during the late period show concentrations in the Outbuilding area, as well as in the yard areas of the main house.

A change in the material pattern at the Outbuilding complex was noted after Emancipation. The ceramic assemblage began to resemble that of the main house in form, if not type, possibly signaling changes in dietary patterns. The exploitation of wild species decreased dramatically, and the types of meat cuts increased in quality. This pattern of material change has been noted at other postbellum sites (Joseph 1989; Wheaton and Garrow 1985; Brown and Cooper 1989), and has usually been attributed to the processes of acculturation. While the change in material pattern at the postbellum African-American sites has often been quite pronounced, it seems unlikely that it signals a rapid, relatively wholesale adoption of European-American world-view, with an implied decline in African-American identity. As noted by Howson, "people do not just shift from Cultural Model A to Cultural Model B" (1990:84); it is far more likely that investigators have been unable to recognize more subtle evidence of cultural continuity and community in the midst of what were quite sweeping social and economic changes.

The material patterns described for the African-American components of Oakley Plantation (Wilkie 1994) have correlates in the subassemblage recovered from the Outbuilding complex at Nina Plantation. Despite the fact that during the late period, artifact forms and numbers began to approximate those found in the Main House complex, some material patterns that had been evident during the early period at

the Outbuilding complex actually intensified during the late, post-Emancipation period. This intensification was most visible in the higher numbers of personal goods. The post-Emancipation subassemblage was marked also by the presence of education-related artifacts such as slate pencils and eyeglasses. A change in dietary patterns after Emancipation was suggested by changes in the proportions of both vessel forms and faunal data; these categories suggested an increasing similarity between the dietary practices in use at the Main House and those at the Outbuilding complex.

The process of acculturation implies a unilateral, cultural adjustment; the data from Nina Plantation do not support such a hypothesis. Rather, they suggest a more dynamic process of creolization, in which there was multilateral movement towards new cultural configurations that included shared attributes; for example, the increasing similarity of vessel forms and faunal remains at both the main house and the outbuildings suggests a growing commonality in foodways. The process of creolization, however, was additive, and did not negate unique cultural and ethnic traits. The increase in artifacts used for personal adornment, for example, was unique to the Outbuilding complex. This was not a new material pattern; it was an intensification of a pattern that had been present throughout the nineteenth century at the Nina Plantation outbuildings, and that was noted at numerous other nineteenth century African-American sites. The data from Nina Plantation suggest that after Emancipation, the African-American occupants enjoyed both a *strengthening* of ethnic identity and a modicum of increased economic power and market access, as they continued to participate in the Americanization of Nina Plantation.

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APPENDIX I

PROVENIENCE INFORMATION

TABLE OF CONTENTS

ABBREVIATIONS FOR APPENDIX I

FS	--	Field Specimen
CAT #	--	Catelog Number
SFC	--	Surface
UMS	--	Upper Midden Surface
TR	--	Trench
GB	--	General Backdirt

Table 1. List of Field Specimen (FS) Numbers and Proveniences from Site 16PC62.

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
0001	0513	SFC			SFC			
0002	0548	SFC			SFC			
0003	0510	SFC			SFC			
0004	0510	SFC			SFC			
0005	0549	SFC			SFC			
0006	0549	SFC			SFC			
0007	0549	SFC			SFC			
0008	0549	SFC			SFC			
0009	0510	SFC			SFC			
0010	0550	SFC			SFC			
0011	0519	C			UMS		0187.0	0134.0
0012	0533	C			UMS		0180.0	0134.0
0013	0589	C			UMS		0164.0	0138.0
0014	0618	C			UMS	011	0187.0	0134.0
0015	0605	C			UMS		0175.0	0140.0
0016	0563	C			UMS		0175.0	0140.0
0017	0563	C			UMS		0175.0	0140.0
0018	0563	C			UMS		0175.0	0140.0
0019	0625	C			TR		0184.0	0128.0
0020	0625	C			TR		0184.0	0128.0
0021	0625	C			TR		0184.0	0128.0
0022	0571	C			UMS		0190.0	0140.0
0023	0571	C			UMS		0190.0	0140.0
0024	0571	C			UMS		0190.0	0140.0
0025	0570	C			UMS		0190.0	0135.0
0026	0570	C			UMS		0190.0	0135.0
0027	0570	C			UMS		0190.0	0135.0
0028	0569	C			UMS		0185.0	0140.0
0029	0569	C			UMS		0185.0	0140.0
0030	0569	C			UMS		0185.0	0140.0
0031	0568	C			UMS		0185.0	0135.0
0032	0568	C			UMS		0185.0	0135.0
0033	0568	C			UMS		0185.0	0135.0
0034	0568	C			UMS		0185.0	0135.0
0035	0507	C			UMS		0165.0	0145.0
0036	0507	C			UMS		0165.0	0145.0
0037	0507	C			UMS		0165.0	0145.0
0038	0507	C			UMS		0165.0	0145.0
0039	0507	C			UMS		0165.0	0145.0
0040	0507	C			UMS		0165.0	0145.0
0041	0507	C			UMS		0165.0	0145.0
0042	0553	C			UMS		0150.0	0140.0
0043	0553	C			UMS		0150.0	0140.0
0044	0553	C			UMS		0150.0	0140.0
0045	0572	C			UMS		0190.0	0145.0
0046	0567	C			UMS		0180.0	0145.0
0047	0567	C			UMS		0180.0	0145.0
0048	0566	C			UMS		0180.0	0140.0
0049	0566	C			UMS		0180.0	0140.0
0050	0566	C			UMS		0180.0	0140.0
0051	0566	C			UMS		0180.0	0140.0
0052	0565	C			UMS		0180.0	0135.0
0053	0565	C			UMS		0180.0	0135.0
0054	0565	C			UMS		0180.0	0135.0
0055	0564	C			UMS		0175.0	0145.0
0056	0564	C			UMS		0175.0	0145.0
0057	0564	C			UMS		0175.0	0145.0
0058	0560	C			UMS		0170.0	0135.0
0059	0562	C			UMS		0170.0	0145.0
0060	0562	C			UMS		0170.0	0145.0
0061	0562	C			UMS		0170.0	0145.0
0062	0561	C			UMS		0170.0	0140.0
0063	0561	C			UMS		0170.0	0140.0

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
0064	0561	C			UMS		0170.0	0140.0
0065	0561	C			UMS		0170.0	0140.0
0066	0561	C			UMS		0170.0	0140.0
0067	0514	C			UMS		0160.0	0140.0
0068	0561	C			UMS		0170.0	0140.0
0069	0514	C			UMS		0160.0	0140.0
0070	0514	C			UMS		0160.0	0140.0
0071	0514	C			UMS		0160.0	0140.0
0072	0514	C			UMS		0160.0	0140.0
0073	0514	C			UMS		0160.0	0140.0
0074	0514	C			UMS		0160.0	0140.0
0075	0514	C			UMS		0160.0	0140.0
0076	0514	C			UMS		0160.0	0140.0
0077	0514	C			UMS		0160.0	0140.0
0078	0514	C			UMS		0160.0	0140.0
0079	0514	C			UMS		0160.0	0140.0
0080	0514	C			UMS		0160.0	0140.0
0081	0514	C			UMS		0160.0	0140.0
0082	0514	C			UMS		0160.0	0140.0
0083	0514	C			UMS		0160.0	0140.0
0084	0514	C			UMS		0160.0	0140.0
0085	0514	C			UMS		0160.0	0140.0
0086	0553	C			UMS		0150.0	0140.0
0087	0554	C			UMS		0155.0	0140.0
0088	0554	C			UMS		0155.0	0140.0
0089	0554	C			UMS		0155.0	0140.0
0090	0554	C			UMS		0155.0	0140.0
0091	0559	C			UMS		0165.0	0140.0
0092	0559	C			UMS		0165.0	0140.0
0093	0559	C			UMS		0165.0	0140.0
0094	0559	C			UMS		0165.0	0140.0
0095	0559	C			UMS		0165.0	0140.0
0096	0559	C			UMS		0165.0	0140.0
0097	0559	C			UMS		0165.0	0140.0
0098	0559	C			UMS		0165.0	0140.0
0099	0559	C			UMS		0165.0	0140.0
0100	0558	C			UMS		0165.0	0135.0
0101	0556	C			UMS		0160.0	0145.0
0102	0556	C			UMS		0160.0	0145.0
0103	0556	C			UMS		0160.0	0145.0
0104	0556	C			UMS		0160.0	0145.0
0105	0556	C			UMS		0160.0	0145.0
0106	0556	C			UMS		0160.0	0145.0
0107	0555	C			UMS		0155.0	0145.0
0108	0555	C			UMS		0155.0	0145.0
0109	0555	C			UMS		0155.0	0145.0
0110	0555	C			UMS		0155.0	0145.0
0111	0555	C			UMS		0155.0	0145.0
0112	0597	C			UMS		0172.0	0130.0
0113	0597	C			UMS		0172.0	0130.0
0114	0576	C			UMS			
0115	0616	C			UMS		0189.0	0122.5
0116	0601	C			UMS		0174.0	0130.0
0117	0613	C			UMS		0178.0	0136.0
0118	0610	C			UMS		0178.0	0130.0
0119	0610	C			UMS		0178.0	0130.0
0120	0610	C			UMS		0178.0	0130.0
0121	0606	C			UMS		0176.0	0130.0
0122	0606	C			UMS		0176.0	0130.0
0123	0614	C			UMS		0180.0	0130.0
0124	0614	C			UMS		0180.0	0130.0
0125	0615	C			UMS		0180.0	0139.0
0126	0511	C			UMS		0160.0	0132.0

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
0127	0511	C			UMS		0160.0	0132.0
0128	0516	C			UMS		0170.0	0134.0
0129	0516	C			UMS		0170.0	0134.0
0130	0516	C			UMS		0170.0	0134.0
0131	0584	C			UMS		0162.0	0134.0
0132	0584	C			UMS		0162.0	0134.0
0133	0581	C			UMS		0160.0	0134.0
0134	0587	C			UMS		0164.0	0134.0
0135	0587	C			UMS		0164.0	0134.0
0136	0587	C			UMS		0164.0	0134.0
0137	0608	C			UMS		0176.0	0134.0
0138	0608	C			UMS		0176.0	0134.0
0139	0608	C			UMS		0176.0	0134.0
0140	0511	C			UMS		0160.0	0132.0
0141	0533	C			UMS		0180.0	0134.0
0142	0533	C			UMS		0180.0	0134.0
0143	0533	C			UMS		0180.0	0134.0
0144	0533	C			UMS		0180.0	0134.0
0145	0582	C			UMS		0160.0	0136.0
0146	0582	C			UMS		0160.0	0136.0
0147	0599	C			UMS		0172.0	0134.0
0148	0599	C			UMS		0172.0	0134.0
0149	0599	C			UMS		0172.0	0134.0
0150	0592	C			UMS		0166.0	0136.0
0151	0592	C			UMS		0166.0	0136.0
0152	0592	C			UMS		0166.0	0136.0
0153	0586	C			UMS		0164.0	0132.0
0154	0586	C			UMS		0164.0	0132.0
0155	0586	C			UMS		0164.0	0132.0
0156	0609	C			UMS		0176.0	0136.0
0157	0609	C			UMS		0176.0	0136.0
0158	0609	C			UMS		0176.0	0136.0
0159	0595	C			UMS		0170.0	0132.0
0160	0595	C			UMS		0170.0	0132.0
0161	0595	C			UMS		0170.0	0132.0
0162	0590	C			UMS		0166.0	0132.0
0163	0590	C			UMS		0166.0	0132.0
0164	0590	C			UMS		0166.0	0132.0
0165	0588	C			UMS		0164.0	0136.0
0166	0588	C			UMS		0164.0	0136.0
0167	0588	C			UMS		0164.0	0136.0
0168	0611	C			UMS		0178.0	0132.0
0169	0611	C			UMS		0178.0	0132.0
0170	0591	C			UMS		0166.0	0134.0
0171	0591	C			UMS		0166.0	0134.0
0172	0591	C			UMS		0166.0	0134.0
0173	0583	C			UMS		0162.0	0132.0
0174	0583	C			UMS		0162.0	0132.0
0175	0598	C			UMS		0172.0	0132.0
0176	0598	C			UMS		0172.0	0132.0
0177	0598	C			UMS		0172.0	0132.0
0178	0612	C			UMS		0178.0	0134.0
0179	0612	C			UMS		0178.0	0134.0
0180	0612	C			UMS		0178.0	0134.0
0181	0612	C			UMS		0178.0	0134.0
0182	0585	C			UMS		0162.0	0136.0
0183	0585	C			UMS		0162.0	0136.0
0184	0602	C			UMS		0174.0	0132.0
0185	0602	C			UMS		0174.0	0132.0
0186	0596	C			UMS		0170.0	0136.0
0187	0596	C			UMS		0170.0	0136.0
0188	0596	C			UMS		0170.0	0136.0
0189	0600	C			UMS		0172.0	0136.0

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
0190	0600	C			UMS		0172.0	0136.0
0191	0600	C			UMS		0172.0	0136.0
0192	0604	C			UMS		0174.0	0136.0
0193	0604	C			UMS		0174.0	0136.0
0194	0604	C			UMS		0174.0	0136.0
0195	0593	C			UMS		0168.0	0132.0
0196	0593	C			UMS		0168.0	0132.0
0197	0593	C			UMS		0168.0	0132.0
0198	0546	C			UMS		0168.0	0134.0
0199	0546	C			UMS		0168.0	0134.0
0200	0546	C			UMS		0168.0	0134.0
0201	0546	C			UMS		0168.0	0134.0
0202	0546	C			UMS		0168.0	0134.0
0203	0607	C			UMS		0176.0	0132.0
0204	0607	C			UMS		0176.0	0132.0
0205	0607	C			UMS		0176.0	0132.0
0206	0607	C			UMS		0176.0	0132.0
0207	0603	C			UMS		0174.0	0134.0
0208	0603	C			UMS		0174.0	0134.0
0209	0603	C			UMS		0174.0	0134.0
0210	0594	C			UMS		0168.0	0136.0
0211	0594	C			UMS		0168.0	0136.0
0212	0594	C			UMS		0168.0	0136.0
0213	0594	C			UMS		0168.0	0136.0
0214	0619	C			TR		0172.0	0128.0
0215	0619	C			TR		0172.0	0128.0
0216	0619	C			TR		0172.0	0128.0
0217	0620	C			TR		0172.0	0130.0
0218	0620	C			TR		0172.0	0130.0
0219	0620	C			TR		0172.0	0130.0
0220	0620	C			TR		0172.0	0130.0
0221	0621	C			TR		0172.0	0132.0
0222	0621	C			TR		0172.0	0132.0
0223	0621	C			TR		0172.0	0132.0
0224	0622	C			TR		0172.0	0134.0
0225	0622	C			TR		0172.0	0134.0
0226	0622	C			TR		0172.0	0134.0
0227	0622	C			TR		0172.0	0134.0
0228	0622	C			TR		0172.0	0134.0
0229	0623	C			TR		0172.0	0136.0
0230	0623	C			TR		0172.0	0136.0
0231	0623	C			TR		0172.0	0136.0
0232	0623	C			TR		0172.0	0136.0
0233	0624	C			TR		0172.0	0138.0
0234	0624	C			TR		0172.0	0138.0
0235	0624	C			TR		0172.0	0138.0
0236	0624	C			TR		0172.0	0138.0
0237	1319	E	017	II	01	031	0239.0	0115.5
0238	1274	E	006	II	01	051	0241.0	0115.0
0239	1250	E	003	I	01	028	0232.0	0118.5
0240	1266	E	005	I	01	030	0236.5	0116.0
0241	1258	E	004	I	01		0234.0	0118.0
0242	1258	E	004	I	01		0234.0	0118.0
0243	1267	E	005	I	02	030	0236.5	0116.0
0244	1267	E	005	I	02	030	0236.5	0116.0
0245	1267	E	005	I	02	030	0236.5	0116.0
0246	1267	E	005	I	02	030	0236.5	0116.0
0247	1251	E	003	II	01	028	0232.0	0118.5
0248	1251	E	003	II	01	028	0232.0	0118.5
0249	1251	E	003	II	01	028	0232.0	0118.5
0250	1251	E	003	II	01	028	0232.0	0118.5
0251	1258	E	004	I	01		0234.0	0118.0
0252	1268	E	005	II	01	030	0236.5	0116.0

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
0253	1268	E	005	II	01	030	0236.5	0116.0
0254	1268	E	005	II	01	030	0236.5	0116.0
0255	1268	E	005	II	01	030	0236.5	0116.0
0256	1268	E	005	II	01	030	0236.5	0116.0
0257	1268	E	005	II	01	030	0236.5	0116.0
0258	1268	E	005	II	01	030	0236.5	0116.0
0259	1268	E	005	II	01	030	0236.5	0116.0
0260	1268	E	005	II	01	030	0236.5	0116.0
0261	1259	E	004	II	01	029	0234.0	0118.0
0262	1259	E	004	II	01	029	0234.0	0118.0
0263	1259	E	004	II	01	029	0234.0	0118.0
0264	1259	E	004	II	01	029	0234.0	0118.0
0265	1259	E	004	II	01	029	0234.0	0118.0
0266	1259	E	004	II	01	029	0234.0	0118.0
0267	1259	E	004	II	01	029	0234.0	0118.0
0268	1280	E	008	II	01	036	0239.0	0120.5
0269	1280	E	008	II	01	036	0239.0	0120.5
0270	1280	E	008	II	01	036	0239.0	0120.5
0271	1280	E	008	II	01	036	0239.0	0120.5
0272	1249	E	002	III			0224.0	0123.0
0273	1249	E	002	III			0224.0	0123.0
0274	1249	E	002	III			0224.0	0123.0
0275	1249	E	002	III			0224.0	0123.0
0276	1260	E	004	III	01	029	0234.0	0118.0
0277	1260	E	004	III	01	029	0234.0	0118.0
0278	1260	E	004	III	01	029	0234.0	0118.0
0279	1252	E	003	III	01	028	0232.0	0118.5
0280	1252	E	003	III	01	028	0232.0	0118.5
0281	1252	E	003	III	01	028	0232.0	0118.5
0282	1252	E	003	III	01	028	0232.0	0118.5
0283	0517	E	003	III	01	028	0232.0	0118.5
0284	1252	E	003	III	01	028	0232.0	0118.5
0285	1252	E	003	III	01	028	0232.0	0118.5
0286	1270	E	005	III	01	030	0236.5	0116.0
0287	1270	E	005	III	01	030	0236.5	0116.0
0288	1270	E	005	III	01	030	0236.5	0116.0
0289	1270	E	005	III	01	030	0236.5	0116.0
0290	1270	E	005	III	01	030	0236.5	0116.0
0291	1270	E	005	III	01	030	0236.5	0116.0
0292	1270	E	005	III	01	030	0236.5	0116.0
0293	1281	E	008	III	01	036	0239.0	0120.5
0294	1281	E	008	III	01	036	0239.0	0120.5
0295	1302	E	014	II	01	026	0228.0	0116.0
0296	1302	E	014	II	01	026	0228.0	0116.0
0297	1302	E	014	II	01	026	0228.0	0116.0
0298	1302	E	014	II	01	026	0228.0	0116.0
0299	1302	E	014	II	01	026	0228.0	0116.0
0300	1302	E	014	II	01	026	0228.0	0116.0
0301	1302	E	014	II	01	026	0228.0	0116.0
0302	1302	E	014	II	01	026	0228.0	0116.0
0303	1302	E	014	II	01	026	0228.0	0116.0
0304	1302	E	014	II	01	026	0228.0	0116.0
0305	1302	E	014	II	01	026	0228.0	0116.0
0306	1302	E	014	II	01	026	0228.0	0116.0
0307	1302	E	014	II	01	026	0228.0	0116.0
0308	1302	E	014	II	01	026	0228.0	0116.0
0309	1302	E	014	II	01	026	0228.0	0116.0
0310	1302	E	014	II	01	026	0228.0	0116.0
0311	1302	E	014	II	01	026	0228.0	0116.0
0312	1302	E	014	II	01	026	0228.0	0116.0
0313	1302	E	014	II	01	026	0228.0	0116.0
0314	1336	E	024	II	01	037	0225.5	0119.5
0315	1302	E	014	II	01	026	0228.0	0116.0

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
0316	1302	E	014	II	01	026	0228.0	0116.0
0317	1302	E	014	II	01	026	0228.0	0116.0
0318	1302	E	014	II	01	026	0228.0	0116.0
0319	1280	E	008	II	01	036	0239.0	0120.5
0320	1261	E	004	III	02	071	0234.0	0118.0
0321	1261	E	004	III	02	071	0234.0	0118.0
0322	1261	E	004	III	02	071	0234.0	0118.0
0323	1261	E	004	III	02	071	0234.0	0118.0
0324	1261	E	004	III	02	071	0234.0	0118.0
0325	1261	E	004	III	02	071	0234.0	0118.0
0326	1282	E	008	IV	01	036	0239.0	0120.5
0327	1282	E	008	IV	01	036	0239.0	0120.5
0328	1282	E	008	IV	01	036	0239.0	0120.5
0329	1303	E	014	II	02	026	0228.0	0116.0
0330	1303	E	014	II	02	026	0228.0	0116.0
0331	1336	E	024	II	01	037	0225.5	0119.5
0332	1496	F	004		04	043	0266.0	0135.0
0333	1303	E	014	II	02	026	0228.0	0116.0
0334	1303	E	014	II	02	026	0228.0	0116.0
0335	1302	E	014	II	01	026	0228.0	0116.0
0336	1303	E	014	II	02	026	0228.0	0116.0
0337	1303	E	014	II	02	026	0228.0	0116.0
0338	1303	E	014	II	02	026	0228.0	0116.0
0339	1303	E	014	II	02	026	0228.0	0116.0
0340	1303	E	014	II	02	026	0228.0	0116.0
0341	1303	E	014	II	02	026	0228.0	0116.0
0342	1303	E	014	II	02	026	0228.0	0116.0
0343	1303	E	014	II	02	026	0228.0	0116.0
0344	1303	E	014	II	02	026	0228.0	0116.0
0345	1283	E	008	V	01	070	0239.0	0120.5
0346	1271	E	005	III	01	030	0236.5	0116.0
0347	1271	E	005	III	01	030	0236.5	0116.0
0348	1271	E	005	III	01	030	0236.5	0116.0
0349	1271	E	005	III	01	030	0236.5	0116.0
0350	1253	E	003	IV	01	028	0232.0	0118.5
0351	1253	E	003	IV	01	028	0232.0	0118.5
0352	1253	E	003	IV	01	028	0232.0	0118.5
0353	1253	E	003	IV	01	028	0232.0	0118.5
0354	1253	E	003	IV	01	028	0232.0	0118.5
0355	1284	E	008	VI	01	070	0239.0	0120.5
0356	1284	E	008	VI	01	070	0239.0	0120.5
0357	1284	E	008	VI	01	070	0239.0	0120.5
0358	1262	E	004	IV	01	028	0234.0	0118.0
0359	1262	E	004	IV	01	028	0234.0	0118.0
0360	1262	E	004	IV	01	028	0234.0	0118.0
0361	1272	E	005	III	02	030	0236.5	0116.0
0362	1254	E	003	IV	02	028	0232.0	0118.5
0363	1308	E	015	I	01		0227.0	0113.5
0364	1304	E	014	III	01	026	0228.0	0116.0
0365	1304	E	014	III	01	026	0228.0	0116.0
0366	1304	E	014	III	01	026	0228.0	0116.0
0367	1304	E	014	III	01	026	0228.0	0116.0
0368	1304	E	014	III	01	026	0228.0	0116.0
0369	1304	E	014	III	01	026	0228.0	0116.0
0370	1304	E	014	III	01	026	0228.0	0116.0
0372	1307	E	014			079	0228.0	0116.0
0373	1285	E	008	VIII	01	036	0239.0	0120.5
0374	1285	E	008	VIII	01	036	0239.0	0120.5
0375	1223	E						
0376	1241	E	001	VIII	01	048	0224.0	0114.0
0377	1242	E	001	IX	01	048	0224.0	0114.0
0378	1286	E	008	X	01	036	0239.0	0120.5
0379	1263	E	004	IV	02	028	0234.0	0118.0

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
0380	1263	E	004	IV	02	028	0234.0	0118.0
0381	1263	E	004	IV	02	028	0234.0	0118.0
0382	1243	E	001	X	01	048	0224.0	0114.0
0383	1244	E	001	X	02	048	0224.0	0114.0
0384	1256	E	003	V	01	028	0232.0	0118.5
0385	1287	E	008	XII	01	036	0239.0	0120.5
0386	1287	E	008	XII	01	036	0239.0	0120.5
0387	1287	E	008	XII	01	036	0239.0	0120.5
0388	1245	E	001	X	03	048	0224.0	0114.0
0389	1264	E	004	IV	03	028	0234.0	0118.0
0390	1264	E	004	IV	03	028	0234.0	0118.0
0391	1265	E	004	IV	04	028	0234.0	0118.0
0392	1309	E	015	III	01	038	0227.0	0113.5
0393	1309	E	015	III	01	038	0227.0	0113.5
0394	1309	E	015	III	01	038	0227.0	0113.5
0395	1309	E	015	III	01	038	0227.0	0113.5
0396	1309	E	015	III	01	038	0227.0	0113.5
0397	1255	E	003	IV	03	028	0232.0	0118.5
0398	1255	E	003	IV	03	028	0232.0	0118.5
0399	1336	E	024	II	01	037	0225.5	0119.5
0400	1336	E	024	II	01	037	0225.5	0119.5
0401	1337	E	024	III	01	037	0225.5	0119.5
0402	1329	E	023	I	01		0226.5	0120.5
0403	1329	E	023	I	01		0226.5	0120.5
0404	1310	E	015	IV	01	038	0227.0	0113.5
0405	1310	E	015	IV	01	038	0227.0	0113.5
0406	1310	E	015	IV	01	038	0227.0	0113.5
0407	1310	E	015	IV	01	038	0227.0	0113.5
0408	1300	E	013	II	01	027	0229.0	0119.0
0409	1300	E	013	II	01	027	0229.0	0119.0
0410	1300	E	013	II	01	027	0229.0	0119.0
0411	1300	E	013	II	01	027	0229.0	0119.0
0412	1259	E	004	II	01	029	0238.0	0118.0
0413	1300	E	013	II	01	027	0229.0	0119.0
0414	1300	E	013	II	01	027	0229.0	0119.0
0415	1257	E	003	V	02	028	0232.0	0118.5
0416	1311	E	015	V	01	038	0227.0	0113.5
0417	1311	E	015	V	01	038	0227.0	0113.5
0418	1311	E	015	V	01	038	0227.0	0113.5
0419	1311	E	015	V	01	038	0227.0	0113.5
0420	1330	E	023	II	01	037	0226.5	0120.5
0421	1330	E	023	II	01	037	0226.5	0120.5
0422	1330	E	023	II	01	037	0226.5	0120.5
0423	1330	E	023	II	01	037	0226.5	0120.5
0424	1337	E	024	III	01	037	0225.5	0119.5
0425	1246	E	001	XII	01	048	0224.0	0114.0
0426	1246	E	001	XII	01	048	0224.0	0114.0
0427	0630	C	002			006	0158.0	0140.0
0428	0630	C	002			006	0158.0	0140.0
0429	0526	C	002		01		0158.0	0140.0
0430	0526	C	002		01		0158.0	0140.0
0431	0526	C	002		01		0158.0	0140.0
0432	0526	C	002		01		0158.0	0140.0
0433	0631	C	003		01		0160.0	0138.0
0434	0631	C	003		01		0160.0	0138.0
0435	0631	C	003		01		0160.0	0138.0
0436	0627	C	001		SFC	004	0160.0	0140.0
0437	0557						0163.0	0140.0
0438	0628	C	001	I	01		0160.0	0140.0
0439	0628	C	001	I	01		0160.0	0140.0
0440	0628	C	001	I	01		0160.0	0140.0
0441	0629	C	002		02		0158.0	0140.0
0442	0629	C	002		02		0158.0	0140.0

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
0443	0629	C	002		02		0158.0	0140.0
0444	1484	F	001		01	043	0266.0	0133.0
0445	1484	F	001		01	043	0266.0	0133.0
0446	1484	F	001		01	043	0266.0	0133.0
0447	1484	F	001		01	043	0266.0	0133.0
0448	1484	F	001		01	043	0266.0	0133.0
0449	1485	F	001		02	043	0266.0	0133.0
0450	1485	F	001		02	043	0266.0	0133.0
0451	1485	F	001		02	043	0266.0	0133.0
0452	1485	F	001		02	043	0266.0	0133.0
0453	1485	F	001		02	043	0266.0	0133.0
0454	1486	F	001		03	043	0266.0	0133.0
0455	1486	F	001		03	043	0266.0	0133.0
0456	1486	F	001		03	043	0266.0	0133.0
0457	1486	F	001		03	043	0266.0	0133.0
0458	0499	F	011			043	0268.0	0135.0
0459	0499	F	011			043	0268.0	0135.0
0460	0499	F	011		01	043	0268.0	0135.0
0461	0499	F	011			043	0268.0	0135.0
0462	1510	F	011		01	043	0268.0	0135.0
0463	1511	F	011		02	043	0268.0	0135.0
0464	1512	F	011		03	043	0268.0	0135.0
0465	1513	F	011		04	043	0268.0	0135.0
0466	1513	F	011		04	043	0268.0	0135.0
0467	1513	F	011		04	043	0268.0	0135.0
0468	1513	F	011		04	043	0268.0	0135.0
0469	1514	F	011		05	043	0268.0	0135.0
0470	1514	F	011		05	043	0268.0	0135.0
0471	1514	F	011		05	043	0268.0	0135.0
0472	1514	F	011		05	043	0268.0	0135.0
0473	1514	F	011		05	043	0268.0	0135.0
0474	1514	F	011		05	043	0268.0	0135.0
0475	1514	F	011		05	043	0268.0	0135.0
0476	1515	F	011		06	043	0268.0	0135.0
0477	1515	F	011		06	043	0268.0	0135.0
0478	1515	F	011		06	043	0268.0	0135.0
0479	1516	F	011		07	043	0268.0	0135.0
0480	0502	F			SFC		0266.0	0138.0
0481	0502	F			SFC		0266.0	0138.0
0482	0502	F			SFC		0266.0	0138.0
0483	0502	F			SFC		0266.0	0138.0
0484	0502	F			SFC		0266.0	0138.0
0485	0508	F	002		02	043	0268.0	0133.0
0486	0508	F	002		02	043	0268.0	0133.0
0487	1487	F	002		01		0268.0	0133.0
0488	1487	F	002		01		0268.0	0133.0
0489	1487	F	002		01		0268.0	0133.0
0490	1487	F	002		01		0268.0	0133.0
0491	0508	F	002		02	043	0268.0	0133.0
0492	0508	F	002		02	043	0268.0	0133.0
0493	0508	F	002		02	043	0268.0	0133.0
0494	1492	F	003		01		0265.0	0133.0
0495	1492	F	003		01		0265.0	0133.0
0496	1492	F	003		01		0265.0	0133.0
0497	1478	F			SFC	043	0265.0	0133.0
0498	0500	F	004		10	043	0266.0	0135.0
0499	0547	F			SFC	043	0266.0	0136.0
0500	1498	F	004		09	043	0266.0	0135.0
0501	0537	C			UMS		0180.0	0132.0
0502	1236	E	001			048	0224.0	0114.0
0503	0602	C			UMS		0174.0	0132.0
0504	0500	F	004		10	043	0266.0	0135.0
0505	1224	E			UMS			

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
0506	1001	D			SFC			
0507	0500	F	004		10	043	0266.0	0135.0
0508	0497	F	004		07	043	0266.0	0135.0
0509	1030	D			UMS		0206.0	0126.0
0510	1493	F	004		01	043	0266.0	0135.0
0511	1494	F	004		02	043	0266.0	0135.0
0512	1494	F	004		02	043	0266.0	0135.0
0513	1495	F	004		03	043	0266.0	0135.0
0514	1495	F	004		03	043	0266.0	0135.0
0515	1495	F	004		03	043	0266.0	0135.0
0516	1496	F	004		04	043	0266.0	0135.0
0517	1496	F	004		04	043	0266.0	0135.0
0518	1496	F	004		04	043	0266.0	0135.0
0519	1496	F	004		04	043	0266.0	0135.0
0520	0501	F	004		05	043	0266.0	0135.0
0521	0501	F	004		05	043	0266.0	0135.0
0522	0501	F	004		05	043	0266.0	0135.0
0523	0501	F	004		05	043	0266.0	0135.0
0524	0501	F	004		05	043	0266.0	0135.0
0525	1497	F	004		06	043	0266.0	0135.0
0526	0497	F	004		07	043	0266.0	0135.0
0527	0497	F	004		07	043	0266.0	0135.0
0528	0497	F	004		07	043	0266.0	0135.0
0529	0497	F	004		07	043	0266.0	0135.0
0530	0497	F	004		07	043	0266.0	0135.0
0531	1313	E	016	II	01		0238.0	0113.5
0532	0496	F	004		08	043	0266.0	0135.0
0533	0496	F	004		08	043	0266.0	0135.0
0534	0496	F	004		08	043	0266.0	0135.0
0535	0496	F	004		08	043	0266.0	0135.0
0536	0495	F	004		09	043	0266.0	0135.0
0537	0495	F	004		09	043	0266.0	0135.0
0538	0500	F	004		10	043	0266.0	0135.0
0539	0500	F	004		10	043	0266.0	0135.0
0540	0500	F	004		10	043	0266.0	0135.0
0541	0500	F	004		10	043	0266.0	0135.0
0542	0500	F	004		10	043	0266.0	0135.0
0543	1302	E	014	II	01	026	0228.0	0116.0
0544	1302	E	014	II	01	026	0228.0	0116.0
0545	1322	E	017	IV	01	031	0239.0	0115.5
0546	1322	E	017	IV	01	031	0239.0	0115.5
0547	1322	E	017	IV	01	031	0239.0	0115.5
0548	1343	E	027A	II	01	96-100	0225.5	0109.0
0549	1343	E	027A	II	01	96-100	0225.5	0109.0
0550	1343	E	027A	II	01	96-100	0225.5	0109.0
0551	1323	E	017	IV	02	031	0239.0	0115.5
0552	1356	E	030	II	01		0229.0	0104.0
0553	1356	E	030	II	01		0229.0	0104.0
0554	1356	E	030	II	01		0229.0	0104.0
0555	1356	E	030	II	01		0229.0	0104.0
0556	1354	E	029	II	01		0225.0	0103.0
0557	1354	E	029	II	01		0225.0	0103.0
0558	1354	E	029	II	01		0225.0	0103.0
0559	1354	E	029	II	01		0225.0	0103.0
0560	1344	E	027A	III	01	96-100	0225.5	0109.0
0561	1344	E	027A	III	01	96-100	0225.5	0109.0
0562	1344	E	027A	III	01	96-100	0225.5	0109.0
0563	1344	E	027A	III	01	96-100	0225.5	0109.0
0564	1344	E	027A	III	01	96-100	0225.5	0109.0
0565	1344	E	027A	III	01	96-100	0225.5	0109.0
0566	1344	E	027A	III	01	96-100	0225.5	0109.0
0567	1316	E	016	IV			0238.0	0113.5
0568	1355	E	029	III	01		0225.0	0103.0

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
0569	1355	E	029	III	01		0225.0	0103.0
0570	1355	E	029	III	01		0225.0	0103.0
0571	1355	E	029	III	01		0225.0	0103.0
0572	1346	E	027B	I	01	96-100	0226.5	0109.0
0573	1346	E	027B	I	01	96-100	0226.5	0109.0
0574	1346	E	027B	I	01	96-100	0226.5	0109.0
0575	1346	E	027B	I	01	96-100	0226.5	0109.0
0576	1346	E	027B	I	01	96-100	0226.5	0109.0
0577	1233	E	001	I	01	048	0224.0	0114.0
0578	1233	E	001	I	01	048	0224.0	0114.0
0579	1233	E	001	I	01	048	0224.0	0114.0
0580	1234	E	001	II	01	048	0224.0	0114.0
0581	1234	E	001	II	01	048	0224.0	0114.0
0582	1234	E	001	II	01	048	0224.0	0114.0
0583	1237	E	001	III	01	048	0224.0	0114.0
0584	1237	E	001	III	01	048	0224.0	0114.0
0585	1237	E	001	III	01	048	0224.0	0114.0
0586	1235	E	001	II	02	048	0224.0	0114.0
0587	1235	E	001	II	02	048	0224.0	0114.0
0588	1235	E	001	II	02	048	0224.0	0114.0
0589	1238	E	001	IV	01	048	0224.0	0114.0
0590	1238	E	001	IV	01	048	0224.0	0114.0
0591	1238	E	001	IV	01	048	0224.0	0114.0
0592	1239	E	001	V	01	048	0224.0	0114.0
0593	1239	E	001	V	01	048	0224.0	0114.0
0594	1239	E	001	V	01	048	0224.0	0114.0
0595	1240	E	001	VI	01	048	0224.0	0114.0
0596	1240	E	001	VI	01	048	0224.0	0114.0
0597	1240	E	001	VI	01	048	0224.0	0114.0
0598	1481	F		II	01	053	0275.0	0108.0
0599	1482	F		III	01	053	0275.0	0108.0
0600	1312	E	015			094	0227.0	0113.5
0601	1317	E	017	I			0239.0	0115.5
0602	1325	E	021	II	01	040	0234.5	0126.0
0603	1325	E	021	II	01	040	0234.5	0126.0
0604	1331	E	023	III	01	037	0226.5	0120.5
0605	1331	E	023	III	01	037	0226.5	0120.5
0606	1331	E	023	III	01	037	0226.5	0120.5
0607	1331	E	023	III	01	037	0226.5	0120.5
0608	1331	E	023	III	01	037	0226.5	0120.5
0609	1331	E	023	III	01	037	0226.5	0120.5
0610	1331	E	023	III	01	037	0226.5	0120.5
0611	1331	E	023	III	01	037	0226.5	0120.5
0612	1331	E	023	III	01	037	0226.5	0120.5
0613	1232	E			UMS		0225.0	0116.0
0614	1288	E	009	I	01		0236.0	0123.0
0615	1288	E	009	I	01		0236.0	0123.0
0616	1326	E	021	III	01	040	0234.5	0126.0
0617	1326	E	021	III	01	040	0234.5	0126.0
0618	1273	E	006	I	01		0241.0	0115.0
0619	1273	E	006	I	01		0241.0	0115.0
0620	1276	E	007	II	01	066	0239.0	0118.0
0621	1276	E	007	II	01	066	0239.0	0118.0
0622	1276	E	007	II	01	066	0239.0	0118.0
0623	1277	E	007	III	01	066	0239.0	0118.0
0624	1277	E	007	III	01	066	0239.0	0118.0
0625	1277	E	007	III	01	066	0239.0	0118.0
0626	1277	E	007	III	01	066	0239.0	0118.0
0627	1278	E	007	IV	01	066	0239.0	0118.0
0628	1278	E	007	IV	01	066	0239.0	0118.0
0629	1318	E	017	II	01	031	0239.0	0115.5
0630	1318	E	017	II	01	031	0239.0	0115.5
0631	1318	E	017	II	01	031	0239.0	0115.5

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
0632	1318	E	017	II	01	031	0239.0	0115.5
0633	1274	E	006	II	01	051	0241.0	0115.0
0634	1274	E	006	II	01	051	0241.0	0115.0
0635	1274	E	006	II	01	051	0241.0	0115.0
0636	1332	E	023	III	02	037	0226.5	0120.5
0637	1332	E	023	III	02	037	0226.5	0120.5
0638	1332	E	023	III	02	037	0226.5	0120.5
0639	1295	E	010	II	01	034	0234.0	0123.5
0640	1295	E	010	II	01	034	0234.0	0123.5
0641	1289	E	009	II	01	035	0236.0	0123.0
0642	1289	E	009	II	01	035	0236.0	0123.0
0643	1289	E	009	II	01	035	0236.0	0123.0
0644	1290	E	009	III	01	035	0236.0	0123.0
0645	1290	E	009	III	01	035	0236.0	0123.0
0646	1290	E	009	III	01	035	0236.0	0123.0
0647	1291	E	009	IV	01	070	0236.0	0123.0
0648	1291	E	009	IV	01	070	0236.0	0123.0
0649	1291	E	009	IV	01	070	0236.0	0123.0
0650	1292	E	009	V	01	070	0236.0	0123.0
0651	1292	E	009	V	01	070	0236.0	0123.0
0652	1296	E	010	III	01	034	0234.0	0123.5
0653	1305	E	014	IV	01	026	0228.0	0116.0
0654	1305	E	014	IV	01	026	0228.0	0116.0
0655	1305	E	014	IV	01	026	0228.0	0116.0
0656	1327	E	021	IV	01	040	0234.5	0126.0
0657	1327	E	021	IV	01	040	0234.5	0126.0
0658	0527	C			SFC			
0659	1334	E	023	IV	01		0226.5	0120.5
0660	1334	E	023	IV	01		0226.5	0120.5
0661	1334	E	023	IV	01		0226.5	0120.5
0662	1297	E	010	III	02	070	0234.0	0123.5
0663	1297	E	010	III	02	070	0234.0	0123.5
0664	1297	E	010	III	02	070	0234.0	0123.5
0665	1274	E	006	II	01	051	0241.0	0115.0
0666	1274	E	006	II	01	051	0241.0	0115.0
0667	1320	E	017	III	01	031	0239.0	0115.5
0668	1320	E	017	III	01	031	0239.0	0115.5
0669	1320	E	017	III	01	031	0239.0	0115.5
0670	1320	E	017	III	01	031	0239.0	0115.5
0671	1314	E	016	III	01		0238.0	0113.5
0672	1314	E	016	III	01		0238.0	0113.5
0673	1314	E	016	III	01		0238.0	0113.5
0674	1314	E	016	III	01		0238.0	0113.5
0675	1314	E	016	III	01		0238.0	0113.5
0676	1340	E	024	VII		037	0225.5	0119.5
0677	1341	E	024	VIII		037	0225.5	0119.5
0678	1488	F	002		03		0268.0	0133.0
0679	1338	E	024	III	02	037	0225.5	0119.5
0680	1338	E	024	III	02	037	0225.5	0119.5
0681	1337	E	024	III	01	037	0225.5	0119.5
0682	1339	E	024	V		037	0225.5	0119.5
0683	1298	E	010	IV	01	035	0234.0	0123.5
0684	1298	E	010	IV	01	035	0234.0	0123.5
0685	1335	E	023	V	01	095	0226.5	0120.5
0686	1335	E	023	V	01	095	0226.5	0120.5
0687	1335	E	023	V	01	095	0226.5	0120.5
0688	1299	E	010	IV	02	035	0234.0	0123.5
0689	1299	E	010	IV	02	035	0234.0	0123.5
0690	1293	E	009	VI	01	035	0236.0	0123.0
0691	1293	E	009	VI	01	035	0236.0	0123.0
0692	1293	E	009	VI	01	035	0236.0	0123.0
0693	1294	E	009	VI	02	035	0236.0	0123.0
0694	1294	E	009	VI	02	035	0236.0	0123.0

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
0695	1321	E	017	III	02	031	0239.0	0115.5
0696	1321	E	017	III	02	031	0239.0	0115.5
0697	1342	E	024	IX		037	0225.5	0119.5
0698	1333	E	023	III	03	095	0226.5	0120.5
0699	1313	E	016	II	01		0238.0	0113.5
0700	1313	E	016	II	01		0238.0	0113.5
0701	1315	E	016	III	02		0238.0	0113.5
0702	1315	E	016	III	02		0238.0	0113.5
0703	1315	E	016	III	02		0238.0	0113.5
0704	1315	E	016	III	02		0238.0	0113.5
0705	1315	E	016	III	02		0238.0	0113.5
0706	1275	E	006	III	01	051	0241.0	0115.0
0707	1275	E	006	III	01	051	0241.0	0115.0
0708	1275	E	006	III	01	051	0241.0	0115.0
0709	1275	E	006	III	01	051	0241.0	0115.0
0710	1306	E	014	V	01		0228.0	0116.0
0711	1279	E	007	V/VI	01	066	0239.0	0118.0
0712	1279	E	007	V/VI	01	066	0239.0	0118.0
0713	1279	E	007	V/VI	01	066	0239.0	0118.0
0714	1248	E	002	II	01		0224.0	0123.0
0715	1247	E	002	I	01		0224.0	0123.0
0719	0504	E	013	II	02	027	0229.0	0119.0
0720	0504	E	013	II	02	027	0229.0	0119.0
0721	0504	E	013	II	02	027	0229.0	0119.0
0722	0504	E	013	II	02	027	0229.0	0119.0
0723	0504	E	013	II	02	027	0229.0	0119.0
0724	0504	E	013	II	02	027	0229.0	0119.0
0725	0504	E	013	II	02	027	0229.0	0119.0
0726	0504	E	013	II	02	027	0229.0	0119.0
0727	0504	E	013	II	02	027	0229.0	0119.0
0728	0504	E	013	II	02	027	0229.0	0119.0
0729	0504	E	013	II	02	027	0229.0	0119.0
0730	0504	E	013	II	02	027	0229.0	0119.0
0731	0504	E	013	II	02	027	0229.0	0119.0
0732	0504	E	013	II	02	027	0229.0	0119.0
0733	0504	E	013	II	02	027	0229.0	0119.0
0734	0504	E	013	II	02	027	0229.0	0119.0
0735	0504	E	013	II	02	027	0229.0	0119.0
0736	0504	E	013	II	02	027	0229.0	0119.0
0737	0634	C	004	I	01		0180.0	0134.0
0738	0634	C	004	I	01		0180.0	0134.0
0739	0634	C	004	I	01		0180.0	0134.0
0740	0635	C	004	I	02		0180.0	0134.0
0741	0635	C	004	I	02		0180.0	0134.0
0742	0635	C	004	I	02		0180.0	0134.0
0743	0530	C	004	I	03		0180.0	0134.0
0744	0530	C	004	I	03		0180.0	0134.0
0745	0530	C	004	I	03		0180.0	0134.0
0746	0515	E	028	II	01	098	0222.0	0110.0
0747	0635	C	004	I	02		0180.0	0134.0
0748	0530	C	004	I	03		0180.0	0134.0
0749	0636	C	004	III	01		0180.0	0134.0
0750	0636	C	004	III	01		0180.0	0134.0
0751	0636	C	004	III	01		0180.0	0134.0
0752	0636	C	004	III	01		0180.0	0134.0
0753	1360	E	031	II	01		0232.0	0104.0
0754	1360	E	031	II	01		0232.0	0104.0
0755	1361	E	031	III	01		0232.0	0104.0
0756	1361	E	031	III	01		0232.0	0104.0
0757	0639	C	005	I	01		0168.0	0134.0
0758	0639	C	005	I	01		0168.0	0134.0
0759	0639	C	005	I	01		0168.0	0134.0
0760	0644	C	006	I	01		0180.0	0133.0

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
0761	0644	C	006	I	01		0180.0	0133.0
0762	0644	C	006	I	01		0180.0	0133.0
0763	1054	D	001	III	01	090	0215.5	0106.0
0764	1054	D	001	III	01	090	0215.5	0106.0
0765	1054	D	001	III	01	090	0215.5	0106.0
0766	1054	D	001	III	01	090	0215.5	0106.0
0767	0640	C	005	II	01		0168.0	0134.0
0768	0640	C	005	II	01		0168.0	0134.0
0769	0640	C	005	II	01		0168.0	0134.0
0770	0661	C	007	I	01		0179.0	0134.0
0771	0661	C	007	I	01		0179.0	0134.0
0772	0661	C	007	I	01		0179.0	0134.0
0773	0661	C	007	I	01		0179.0	0134.0
0774	0641	C	005	III	01		0168.0	0134.0
0775	0641	C	005	III	01		0168.0	0134.0
0776	0641	C	005	III	01		0168.0	0134.0
0777	0641	C	005	III	01		0168.0	0134.0
0778	0646	C	006	I	02		0180.0	0133.0
0779	0646	C	006	I	02		0180.0	0133.0
0780	0646	C	006	I	02		0180.0	0133.0
0781	1362	E	031	III	02		0232.0	0104.0
0782	1363	E	031	IV	01		0232.0	0104.0
0783	1363	E	031	IV	01		0232.0	0104.0
0784	0642	C	005	IV	01		0168.0	0134.0
0785	0638	C	005				0168.0	0134.0
0786	1364	E	031	V	01		0232.0	0104.0
0787	1055	D	001	IV	01	090	0215.5	0106.0
0788	1055	D	001	IV	01	090	0215.5	0106.0
0789	1055	D	001	IV	01	090	0215.5	0106.0
0790	1347	E	027B	III	01	119	0226.5	0109.0
0791	1347	E	027B	III	01	119	0226.5	0109.0
0792	1347	E	027B	III	01	119	0226.5	0109.0
0793	1347	E	027B	III	01	119	0226.5	0109.0
0794	1347	E	027B	III	01	119	0226.5	0109.0
0795	1347	E	027B	III	01	119	0226.5	0109.0
0796	1347	E	027B	III	01	119	0226.5	0109.0
0797	1347	E	027B	III	01	119	0226.5	0109.0
0798	1347	E	027B	III	01	119	0226.5	0109.0
0799	1347	E	027B	III	01	119	0226.5	0109.0
0800	1347	E	027B	III	01	119	0226.5	0109.0
0801	0676	C	008	I	01		0161.0	0134.0
0802	0676	C	008	I	01		0161.0	0134.0
0803	0676	C	008	I	01		0161.0	0134.0
0804	0676	C	008	I	01		0161.0	0134.0
0805	1301	E	013	III	01	027	0229.0	0119.0
0806	0504	E	013	II	02	027	0229.0	0119.0
0807	1301	E	013	III	01	027	0229.0	0119.0
0808	1328	E	021	IV	02		0234.5	0126.0
0809	1301	E	013	III	01	027	0229.0	0119.0
0810	1301	E	013	III	01	027	0229.0	0119.0
0811	0662	C	007	I	02		0179.0	0134.0
0812	0662	C	007	I	02		0179.0	0134.0
0813	0662	C	007	I	02		0179.0	0134.0
0814	0677	C	008	II	01		0161.0	0134.0
0815	0677	C	008	II	01		0161.0	0134.0
0816	0677	C	008	II	01		0161.0	0134.0
0817	1357	E	030	III	01		0229.0	0104.0
0818	1357	E	030	III	01		0229.0	0104.0
0819	1358	E	030	III	02		0229.0	0104.0
0820	1359	E	030	IV	01		0229.0	0104.0
0821	0678	C	008	III	01		0161.0	0134.0
0822	0678	C	008	III	01		0161.0	0134.0
0823	0678	C	008	III	01		0161.0	0134.0

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
0824	0679	C	008	IIIA	01		0161.0	0134.0
0825	0679	C	008	IIIA	01		0161.0	0134.0
0826	0679	C	008	IIIA	01		0161.0	0134.0
0827	1371	E	033	II	01	107	0231.5	0127.5
0828	1371	E	033	II	01	107	0231.5	0127.5
0829	1371	E	033	II	01	107	0231.5	0127.5
0830	0688	C	011	I	01	14	0179.0	0117.5
0831	0689	C	011	II	01	14	0179.0	0117.5
0832	0689	C	011	II	01	14	0179.0	0117.5
0833	0689	C	011	II	01	14	0179.0	0117.5
0834	0690	C	011	II	02	14	0179.0	0117.5
0835	0690	C	011	II	02	14	0179.0	0117.5
0836	0690	C	011	II	02	14	0179.0	0117.5
0837	0683	C	009	I	01		0180.0	0132.0
0838	0683	C	009	I	01		0180.0	0132.0
0839	0683	C	009	I	01		0180.0	0132.0
0840	0683	C	009	I	01		0180.0	0132.0
0841	0684	C	009	I	02		0180.0	0132.0
0842	0684	C	009	I	02		0180.0	0132.0
0843	1347	E	027B	III	01	119	0226.5	0109.0
0844	1347	E	027B	III	01	119	0226.5	0109.0
0845	1347	E	027B	III	01	119	0226.5	0109.0
0846	1348	E	027C	II	01	96-100	0225.5	0108.5
0847	1349	E	027C	III	01	96-100	0225.5	0108.5
0848	1349	E	027C	III	01	96-100	0225.5	0108.5
0849	1349	E	027C	III	01	96-100	0225.5	0108.5
0850	0686	C	010	I	01		0166.0	0130.0
0851	0686	C	010	I	01		0166.0	0130.0
0852	0686	C	010	I	01		0166.0	0130.0
0853	1374	E	034	I	01		0236.0	0131.0
0854	1375	E	034	I	02		0236.0	0131.0
0855	0687	C	010	II	01		0166.0	0130.0
0856	1376	E	034	II	01		0236.0	0131.0
0857	1377	E	034	III	01		0236.0	0131.0
0858	1350	E	027D	IV	01	96-100	0225.5	0109.5
0859	0521	E		SFC			0235.0	0132.0
0860	1351	E	027D	V	01	96-100	0225.5	0109.5
0861	0720	C	014	I	01		0164.0	0119.0
0862	0720	C	014	I	01		0164.0	0119.0
0863	0720	C	014	I	01		0164.0	0119.0
0864	1352	E	027D	VI	01	96-100	0225.5	0109.5
0865	1347	E	027B	III	01	119	0226.5	0109.0
0866	1347	E	027B	III	01	119	0226.5	0109.0
0867	1347	E	027B	III	01	119	0226.5	0109.0
0868	0698	C	013	I	02	116	0181.0	0132.0
0870	1378	E	035	II	01	106	0229.5	0128.5
0871	1378	E	035	II	01	106	0229.5	0128.5
0872	1379	E	036	I	01		0235.0	0120.5
0873	1380	E	036	II	01		0235.0	0120.5
0874	1380	E	036	II	01		0235.0	0120.5
0875	0721	C	014	II	01		0164.0	0119.0
0876	1381	E	036	III	01		0235.0	0120.5
0877	0691	C	011	II	03	14	0179.0	0117.5
0878	0691	C	011	II	03	14	0179.0	0117.5
0879	0691	C	011	II	03	14	0179.0	0117.5
0880	0692	C	011	II	04	14	0179.0	0117.5
0881	0692	C	011	II	04	14	0179.0	0117.5
0882	0692	C	011	II	04	14	0179.0	0117.5
0883	0692	C	011	II	04	14	0179.0	0117.5
0884	0693	C	011	II	05	14	0179.0	0117.5
0885	0693	C	011	II	05	14	0179.0	0117.5
0886	0693	C	011	II	05	14	0179.0	0117.5
0887	0696	C	012	I	01		0178.0	0134.0

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
0888	0696	C	012	I	01		0178.0	0134.0
0889	0696	C	012	I	01		0178.0	0134.0
0890	0696	C	012	I	01		0178.0	0134.0
0891	0545	C	012	I	02		0178.0	0134.0
0892	0545	C	012	I	02		0178.0	0134.0
0893	0545	C	012	I	02		0178.0	0134.0
0894	0545	C	012	I	02		0178.0	0134.0
0895	0509	C	004	III	02		0180.0	0134.0
0896	0509	C	004	III	02		0180.0	0134.0
0897	0509	C	004	III	02		0180.0	0134.0
0898	0509	C	004	III	02		0180.0	0134.0
0899	0697	C	013	I	01	116	0181.0	0132.0
0900	0697	C	013	I	01	116	0181.0	0132.0
0901	0697	C	013	I	01	116	0181.0	0132.0
0902	0697	C	013	I	01	116	0181.0	0132.0
0903	0722	C	015	I	01		0177.0	0129.0
0904	0722	C	015	I	01		0177.0	0129.0
0905	0722	C	015	I	01		0177.0	0129.0
0906	1382	E	036	IV	01		0235.0	0120.5
0907	1324	E	018	II	01	045	0243.0	0120.0
0908	1324	E	018	II	01	045	0243.0	0120.0
0909	1324	E	018	II	01	045	0243.0	0120.0
0910	1383	E	036	IV	02		0235.0	0120.5
0911	1383	E	036	IV	02		0235.0	0120.5
0912	1384	E	041	II	01	112	0246.0	0122.5
0913	0723	C	015	I	02		0177.0	0129.0
0914	0723	C	015	I	02		0177.0	0129.0
0915	0723	C	015	I	02		0177.0	0129.0
0916	0662	C	007	I	02		0179.0	0134.0
0917	0734	C	017	II	01		0179.0	0136.0
0918	0734	C	017	II	01		0179.0	0136.0
0919	0734	C	017	II	01		0179.0	0136.0
0920	0733	C	017	I	02		0179.0	0136.0
0921	0733	C	017	I	02		0179.0	0136.0
0922	0733	C	017	I	02		0179.0	0136.0
0923	0732	C	017	I	01		0179.0	0136.0
0924	0732	C	017	I	01		0179.0	0136.0
0925	0732	C	017	I	01		0179.0	0136.0
0926	0645	C	006	I	01		0180.0	0133.0
0927	0645	C	006	I	01		0180.0	0133.0
0928	0647	C	006	I	02		0180.0	0133.0
0929	0647	C	006	I	02		0180.0	0133.0
0930	0647	C	006	I	02		0180.0	0133.0
0931	0698	C	013	I	02	116	0181.0	0132.0
0932	0698	C	013	I	02	116	0181.0	0132.0
0933	0698	C	013	I	02	116	0181.0	0132.0
0934	0730	C	016	I	01		0182.0	0129.0
0935	0730	C	016	I	01		0182.0	0129.0
0936	0730	C	016	I	01		0182.0	0129.0
0937	0730	C	016	I	01		0182.0	0129.0
0938	1385	E	041	III	01		0246.0	0122.5
0939	1499	F	005	I	01		0259.0	0120.0
0940	1499	F	005	I	01		0259.0	0120.0
0941	1499	F	005	I	01		0259.0	0120.0
0942	1056	D	002	II	01	065	0204.0	0129.5
0943	1056	D	002	II	01	065	0204.0	0129.5
0944	1056	D	002	II	01	065	0204.0	0129.5
0945	0735	C	017	III	01		0179.0	0136.0
0946	0735	C	017	III	01		0179.0	0136.0
0947	0735	C	017	III	01		0179.0	0136.0
0948	0637	C	004	III	03		0180.0	0134.0
0950	1065	D	004	II	02	089	0214.5	0113.5
0951	1057	D	002	III	01	065	0204.0	0129.5

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
0952	1500	F	005	II	01		0259.0	0120.0
0953	1500	F	005	II	01		0259.0	0120.0
0954	1500	F	005	II	01		0259.0	0120.0
0955	1500	F	005	II	01		0259.0	0120.0
0956	1500	F	005	II	01		0259.0	0120.0
0957	1500	F	005	II	01		0259.0	0120.0
0958	0522	F	005	III	01		0259.0	0120.0
0959	0522	F	005	III	01		0259.0	0120.0
0960	0522	F	005	III	01		0259.0	0120.0
0961	0522	F	005	III	01		0259.0	0120.0
0962	0522	F	005	III	01		0259.0	0120.0
0963	0522	F	005	III	01		0259.0	0120.0
0964	1066	D	004	III	01	089	0214.5	0113.5
0965	1066	D	004	III	01	089	0214.5	0113.5
0966	1066	D	004	III	01	089	0214.5	0113.5
0967	1066	D	004	III	01	089	0214.5	0113.5
0968	1066	D	004	III	01	089	0214.5	0113.5
0969	1066	D	004	III	01	089	0214.5	0113.5
0970	1066	D	004	III	01	089	0214.5	0113.5
0971	1058	D	002	IV	01	065	0204.0	0129.5
0972	1058	D	002	IV	01	065	0204.0	0129.5
0973	1058	D	002	IV	01	065	0204.0	0129.5
0974	1059	D	002	IV	02	065	0204.0	0129.5
0975	1067	D	004	IV	01	089	0214.5	0113.5
0976	0731	C	016		02	125	0182.0	0129.0
0977	1501	F	005	III	02	130	0259.0	0120.0
0978	0739	C	018	I	01		0174.0	0117.0
0979	0739	C	018	I	01		0174.0	0117.0
0980	0739	C	018	I	01		0174.0	0117.0
0981	0740	C	018	II	01		0174.0	0117.0
0982	0742	C	018			128	0174.0	0117.0
0983	0743	C	018			129	0174.0	0117.0
0984	1386	E	042	II	01		0243.0	0114.5
0985	1386	E	042	II	01		0243.0	0114.5
0986	1060	D	003	I	01	122	0214.0	0131.0
0987	1061	D	003	I	02	122	0214.0	0131.0
0988	1062	D	003	I	03	122	0214.0	0131.0
0989	1063	D	003	I	04	122	0214.0	0131.0
0990	1064	D	003	I	05	122	0214.0	0131.0
0991	1068	D	004	IV	02	089	0214.5	0113.5
0992	1073	D	005	I	01	115	0218.0	0123.0
0993	1073	D	005	I	01	115	0218.0	0123.0
0994	1073	D	005	I	01	115	0218.0	0123.0
0995	1073	D	005	I	01	115	0218.0	0123.0
0996	1069	D	004	V	01	089	0214.5	0113.5
0997	1070	D	004	V	02	089	0214.5	0113.5
0998	1074	D	005	II	01	115	0218.0	0123.0
0999	1074	D	005	II	01	115	0218.0	0123.0
1000	1074	D	005	II	01	115	0218.0	0123.0
1001	1072	D	004	VI	01	089	0214.5	0113.5
1002	0685	C	009	I	02		0180.0	0132.0
1003	0685	C	009	I	02		0180.0	0132.0
1004	0685	C	009	I	02		0180.0	0132.0
1005	0699	C	013	I	03	116	0181.0	0132.0
1006	0699	C	013	I	03	116	0181.0	0132.0
1007	0699	C	013	I	03	116	0181.0	0132.0
1008	0741	C	018	II	02		0174.0	0117.0
1009	0736	C	017	III	02		0179.0	0136.0
1010	0737	C	017	IV	01	131	0179.0	0136.0
1011	0738	C	017	IV	02	131	0179.0	0136.0
1012	0744	C	019	I	01		0170.0	0136.0
1013	0744	C	019	I	01		0170.0	0136.0
1014	0744	C	019	I	01		0170.0	0136.0

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
1015	0745	C	019	II	01		0170.0	0136.0
1016	0745	C	019	II	01		0170.0	0136.0
1017	0745	C	019	II	01		0170.0	0136.0
1018	0746	C	019	III	01	132	0170.0	0136.0
1020	0751	C	020	II	01		0186.0	0126.0
1021	0751	C	020	II	01		0186.0	0126.0
1022	0752	C	020	II	02		0186.0	0126.0
1023	0752	C	020	II	02		0186.0	0126.0
1024	0752	C	020	II	02		0186.0	0126.0
1025	1075	D	005	III	01	115	0218.0	0123.0
1026	1075	D	005	III	01	115	0218.0	0123.0
1027	1075	D	005	III	01	115	0218.0	0123.0
1028	1505	F	007	I	01		0260.0	0126.0
1029	1505	F	007	I	01		0260.0	0126.0
1030	1505	F	007	I	01		0260.0	0126.0
1031	1506	F	007	II	01		0260.0	0126.0
1032	1502	F	006	II	01		0268.0	0131.5
1033	1503	F	006	III	01		0268.0	0131.5
1034	1076	D	005	III	02	115	0218.0	0123.0
1035	1076	D	005	III	02	115	0218.0	0123.0
1036	1076	D	005	III	02	115	0218.0	0123.0
1037	1077	D	005	V	01	115	0218.0	0123.0
1038	1077	D	005	V	01		0218.0	0123.0
1039	1077	D	005	V	01		0218.0	0123.0
1040	1507	F	008	I	01		0275.0	0114.0
1041	1507	F	008	I	01		0275.0	0114.0
1042	1507	F	008	I	01		0275.0	0114.0
1043	1508	F	009	I	01		0270.0	0120.0
1044	1507	F	009	I	01		0270.0	0120.0
1045	1508	F	009	I	01		0270.0	0120.0
1046	1086	D	007	II	01		0212.5	0114.0
1047	1086	D	007	II	01		0212.5	0114.0
1048	1086	D	007	II	01		0212.5	0114.0
1049	0518	D	007	III	01		0212.5	0114.0
1050	0518	D	007	III	01		0212.5	0114.0
1051	0518	D	007	III	01		0212.5	0114.0
1052	0518	D	007	III	01		0212.5	0114.0
1053	0518	D	007	III	01		0212.5	0114.0
1054	0518	D	007	III	01		0212.5	0114.0
1055	0518	D	007	III	01		0212.5	0114.0
1056	0518	D	007	III	01		0212.5	0114.0
1057	0518	D	007	III	01		0212.5	0114.0
1058	1090	D	008	I	01		0202.0	0134.0
1059	1090	D	008	I	01		0202.0	0134.0
1060	1090	D	008	I	01		0202.0	0134.0
1061	1087	D	007	III	02		0212.5	0114.0
1062	1087	D	007	III	02		0212.5	0114.0
1063	1087	D	007	III	02		0212.5	0114.0
1064	1087	D	007	III	02		0212.5	0114.0
1065	1087	D	007	III	02		0212.5	0114.0
1066	1087	D	007	III	02		0212.5	0114.0
1067	1504	F	006	IV	01		0268.0	0131.5
1068	1509	F	010	IV	01		0266.0	0131.5
1069	1486	F	001		03	043	0266.0	0133.0
1070	1091	D	008	II	01		0202.0	0134.0
1071	1091	D	008	II	01		0202.0	0134.0
1072	1091	D	008	II	01		0202.0	0134.0
1073	1092	D	008	III	01		0202.0	0134.0
1074	1092	D	008	III	01		0202.0	0134.0
1075	1092	D	008	III	01		0202.0	0134.0
1076	1365	E	032	I/II	01	104	0221.5	0130.5
1077	1366	E	032	III	01	104	0221.5	0130.5
1078	1088	D	007	IV	02	135	0212.5	0114.0

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
1079	1088	D	007	IV	02	135	0212.5	0114.0
1080	1088	D	007	IV	02	135	0212.5	0114.0
1081	1093	D	009	I	01	085	0213.0	0126.0
1082	1093	D	009	I	01	085	0213.0	0126.0
1083	1093	D	009	I	01	085	0213.0	0126.0
1084	1367	E	032	IV	01	104	0221.5	0130.5
1085	1368	E	032	IV	02	104	0221.5	0130.5
1086	1094	D	009	II	01	085	0213.0	0126.0
1087	1094	D	009	II	01	085	0213.0	0126.0
1088	1094	D	009	II	01	085	0213.0	0126.0
1089	1369	E	032	V	01	104	0221.5	0130.5
1090	0498	F	001			043	0266.0	0133.0
1091	0498	F	001			043	0266.0	0133.0
1092	0498	F	001			043	0266.0	0133.0
1093	0498	F	001			043	0266.0	0133.0
1094	1489	F	002		04		0268.0	0133.0
1095	1489	F	002		04		0268.0	0133.0
1096	1489	F	002		04		0268.0	0133.0
1097	1078	D	006	II	01	084	0209.5	0128.5
1098	1078	D	006	II	01	084	0209.5	0128.5
1099	1078	D	006	II	01	084	0209.5	0128.5
1100	1078	D	006	II	01	084	0209.5	0128.5
1101	1078	D	006	II	01	084	0209.5	0128.5
1102	1079	D	006	III	01	084	0209.5	0128.5
1103	1079	D	006	III	01	084	0209.5	0128.5
1104	1080	D	006	IV	01	084	0209.5	0128.5
1105	1080	D	006	IV	01	084	0209.5	0128.5
1106	1080	D	006	IV	01	084	0209.5	0128.5
1107	1082	D	006	V	01	084	0209.5	0128.5
1108	1370	E	032	V	02	104	0221.5	0130.5
1109	1095	D	009	III	01	085	0213.0	0126.0
1110	1095	D	009	III	01	085	0213.0	0126.0
1111	1095	D	009	III	01	085	0213.0	0126.0
1112	1491	F	002		06	043	0268.0	0133.0
1113	1491	F	002		06	043	0268.0	0133.0
1114	1491	F	002		06	043	0268.0	0133.0
1115	1096	D	009	IV	01		0213.0	0126.0
1116	1096	D	009	IV	01		0213.0	0126.0
1117	1096	D	009	IV	01		0213.0	0126.0
1118	1081	D	006	IV	01A	142	0209.5	0128.5
1119	1083	D	006	V	01	084	0209.5	0128.5
1120	1084	D	006	VI	01	084	0209.5	0128.5
1121	1084	D	006	VI	01	084	0209.5	0128.5
1122	1490	F	002		05	143	0268.0	0133.0
1123	1483	F	001				0266.0	0133.0
1124	1521	I		IV	02		0340.0	0107.0
1125	1231	E			UMS		0230.0	0121.0
1126	1230	E			UMS		0228.0	0112.0
1127	0578	C			SFC		0160.0	0115.0
1128	0579	C			SFC		0160.0	0115.0
1129	0617	C			SFC	014	0160.0	0115.0
1130	0573				UMS		0165.0	0100.0
1131	0524	D			UMS			
1132	1002	D			SFC			
1133	1044	D			UMS		0214.0	0124.0
1134	1033	D			UMS		0208.0	0128.0
1136	1045	D			UMS		0214.0	0128.0
1137	1048	D			UMS		0216.0	0126.0
1138	0505	D			UMS		0214.0	0116.0
1139	1035	D			UMS		0210.0	0128.0
1140	0506	D			UMS		0206.0	0124.0
1142	1043	D			UMS		0214.0	0122.0
1143	1097	D	009	V	01		0213.0	0126.0

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
1144	1097	D	009	V	01		0213.0	0126.0
1145	0544	D	007	V	01		0212.5	0114.0
1146	0544	D	007	V	01		0212.5	0114.0
1147	1248	E	002	II	01		0224.0	0123.0
1148	0626	C		I	01	011	0184.0	0134.0
1149	0626	C		I	01	011	0184.0	0134.0
1150	0529	C	002	I	SFC		0158.0	0140.0
1151	0753	C	021	I	01		0179.0	0126.0
1152	0753	C	021	I	01		0179.0	0126.0
1153	0753	C	021	I	01		0179.0	0126.0
1154	1085	D	006	VI	02	084	0209.5	0128.5
1155	1387	E	043	I	01		0242.0	0104.0
1156	1388	E	043	II	01		0242.0	0104.0
1157	1098	D	009	V	02		0213.0	0126.0
1158	1053	D	001	II	01	090	0215.5	0106.0
1159	1089	D	007	IV	01	135	0212.5	0114.0
1160	1089	D	007	IV	01	135	0212.5	0114.0
1161	1089	D	007	IV	01	135	0212.5	0114.0
1162	1089	D	007	IV	01	135	0212.5	0114.0
1163	1526	J	TR 8	VIII	TR		0372.0	0100.0
1164	1099	D	010	I	01		0198.0	0128.0
1165	1389	E	043	II	02		0242.0	0104.0
1166	0512	D	011	I	01	057	0206.5	0137.0
1167	0512	D	011	I	01	057	0206.5	0137.0
1168	0512	D	011	I	01	057	0206.5	0137.0
1169	1390	E	043	III	01		0242.0	0104.0
1170	1391	E	043	IV	01		0242.0	0104.0
1171	1100	D	010	II	01		0198.0	0128.0
1172	1100	D	010	II	01		0198.0	0128.0
1173	1100	D	010	II	01		0198.0	0128.0
1174	1101	D	010	IV	01		0198.0	0128.0
1175	1392	E	044	II	02		0233.0	0107.0
1176	1517	F	012	II	01		0254.0	0105.0
1177	1393	E	045	III	02		0232.0	0111.0
1178	1393	E	045	III	02		0232.0	0111.0
1179	1393	E	045	III	02		0232.0	0111.0
1180	1393	E	045	III	02		0232.0	0111.0
1181	1393	E	045	III	02		0232.0	0111.0
1182	1518	F	013	II	01		0264.0	0103.0
1183	1372	E	033	III	01	107	0231.5	0127.5
1184	1394	E	046	III	01		0223.0	0106.0
1185	1394	E	046	III	01		0223.0	0106.0
1186	1394	E	046	III	01		0223.0	0106.0
1187	1373	E	033	IV	01	107	0231.5	0127.5
1188	1106	D	013	I	01		0213.5	0109.0
1189	1106	D	013	I	01		0213.5	0109.0
1190	1106	D	013	I	01		0213.5	0109.0
1191	1106	D	013	I	01		0213.5	0109.0
1192	1102	D	012	I	01		0216.0	0110.0
1193	1102	D	012	I	01		0216.0	0110.0
1194	1102	D	012	I	01		0216.0	0110.0
1195	1103	D	012	I	02		0216.0	0110.0
1196	1103	D	012	I	02		0216.0	0110.0
1197	1103	D	012	I	02		0216.0	0110.0
1198	1353	E	028	III	02	098	0222.0	0110.0
1199	1353	E	028	III	02	098	0222.0	0110.0
1200	1353	E	028	III	02	098	0222.0	0110.0
1201	1353	E	028	III	02	098	0222.0	0110.0
1202	0542	E	028	III	01	098	0222.0	0110.0
1203	0542	E	028	III	01	098	0222.0	0110.0
1204	0542	E	028	III	01	098	0222.0	0110.0
1205	0542	E	028	III	01	098	0222.0	0110.0
1206	1071	D	004	VI	01	089	0214.5	0113.5

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
1207	1004	D			UMS			
1208	1004	D			UMS			
1209	1003	D			SFC			
1210	0503	C	TR 4		TR			
1211	0636	C	004	III	01		0180.0	0134.0
1212	1479	F		I	01	052A	0258.0	0100.0
1213	1251	E	003	II	01	028	0232.0	0118.5
1214	1251	E	003	II	01	028	0232.0	0118.5
1215	1022	D			UMS		0200.0	0122.0
1216	1013	D			UMS		0194.0	0118.0
1217	1013	D			UMS		0194.0	0118.0
1218	1013	D			UMS		0194.0	0118.0
1219	1012	D			UMS		0192.0	0120.0
1220	1012	D			UMS		0192.0	0120.0
1221	1012	D			UMS		0192.0	0120.0
1222	1014	D			UMS		0194.0	0120.0
1223	1018	D			UMS		0198.0	0120.0
1224	1011	D			UMS		0192.0	0118.0
1225	1011	D			UMS		0192.0	0118.0
1226	1015	D			UMS		0196.0	0118.0
1227	1017	D			UMS		0198.0	0118.0
1228	1046	D			UMS		0216.0	0120.0
1229	1041	D			UMS		0214.0	0118.0
1230	1041	D			UMS		0214.0	0118.0
1231	1042	D			UMS		0214.0	0120.0
1232	1037	D			UMS		0212.0	0120.0
1233	1038	D			UMS		0212.0	0122.0
1234	1033	D			UMS		0208.0	0128.0
1235	1032	D			UMS		0208.0	0118.0
1236	1025	D			UMS		0202.0	0122.0
1237	1029	D			UMS		0206.0	0122.0
1238	1027	D			UMS		0204.0	0120.0
1239	1031	D			UMS		0206.0	0132.0
1240	1036	D			UMS		0212.0	0118.0
1241	0543	D			UMS		0210.0	0118.0
1242	1034	D			UMS		0210.0	0120.0
1243	1020	D			UMS		0200.0	0116.0
1244	1024	D			UMS		0202.0	0118.0
1245	1021	D			UMS		0200.0	0118.0
1246	1023	D			UMS		0202.0	0116.0
1247	1028	D			UMS		0204.0	0132.0
1248	1039	D			UMS		0212.0	0124.0
1249	0543	D			UMS		0210.0	0118.0
1250	1030	D			UMS		0206.0	0126.0
1251	1019	D			UMS		0198.0	0122.0
1252	1043	D			UMS		0214.0	0122.0
1253	1049	D			UMS		0216.0	0214.0
1254	1051	D			UMS		0222.0	0130.0
1255	1016	D			UMS		0196.0	0120.0
1256	1044	D			UMS		0214.0	0124.0
1257	1040	D			UMS		0212.0	0130.0
1258	1049	D			UMS		0216.0	0214.0
1259	1018	D			UMS		0198.0	0120.0
1260	1047	D			UMS		0216.0	0122.0
1261	1026	D			UMS		0202.0	0130.0
1262	1050	D			UMS		0216.0	0216.0
1263	0506	D			UMS		0206.0	0124.0
1264	0506	D			UMS		0206.0	0124.0
1265	0506	D			UMS		0206.0	0124.0
1266	1343	E	027A	II	01	96-100	0225.5	0109.0
1267	1343	E	027A	II	01	96-100	0225.5	0109.0
1268	1343	E	027A	II	01	96-100	0225.5	0109.0
1269	1343	E	027A	II	01	96-100	0225.5	0109.0

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
1270	1343	E	027A	II	01	96-100	0225.5	0109.0
1271	1325	E	021	II	01	040	0234.5	0126.0
1272	1343	E	027A	II	01	96-100	0225.5	0109.0
1273	1480	F		III	01	052A	0258.0	0100.0
1274	1345	E	027A			100	0225.5	0109.0
1275	1052	D				058	0206.5	0134.5
1276	1052	D				058	0206.5	0134.5
1277	1499	F	005	I	01		0259.0	0120.0
1278	1028	D			UMS		0204.0	0132.0
1279	0764	C	025		01		0177.0	0130.0
1280	0758	C	024		02		0163.0	0133.0
1281	0580	C	TR 4		TR		0172.0	0128.0
1282	0759	C	024		03		0163.0	0133.0
1283	0767	C	026		01		0177.0	0131.0
1284	0760	C	024		04		0163.0	0133.0
1285	0765	C	025		02		0177.0	0130.0
1286	0761	C	024		05		0163.0	0133.0
1287	0771	C	027		02		0182.0	0131.0
1288	0839	C	038		02		0178.0	0133.0
1289	0798	C	032		02		0182.0	0132.0
1290	0762	C	024		06	126	0163.0	0133.0
1291	0768	C	026		02		0177.0	0131.0
1292	0754	C	023		02		0181.0	0128.0
1293	0865	C	041		02		0181.0	0127.0
1294	0829	C	037		02		0179.0	0133.0
1295	0766	C	025		03		0177.0	0130.0
1296	0820	C	035		02		0182.0	0133.0
1297	0520	C	034		02		0178.0	0132.0
1298	0525	C	039		02		0182.0	0134.0
1299	0871	C	042		02		0169.0	0130.0
1300	0723	C	015	I	02		0177.0	0129.0
1301	0769	C	026		03		0177.0	0131.0
1302	0875	C	044		02		0162.0	0133.5
1303	0532	C	028		02		0181.0	0131.0
1304	0755	C	023		03		0181.0	0128.0
1305	0866	C	041		03		0181.0	0127.0
1306	0808	C	033		02		0179.0	0132.0
1307	0786	C	031		02		0178.0	0131.0
1308	0528	C	040		02		0181.0	0134.0
1309	0877	C	044		04		0162.0	0133.5
1310	0876	C	044		03		0162.0	0133.5
1311	0823	C	036		02		0181.0	0133.0
1312	0531	C	030		02		0179.0	0131.0
1313	0536	C	029		02		0180.0	0131.0
1314	0873	C	043		02		0169.0	0131.0
1315	0867	C	041		04		0181.0	0127.0
1316	0868	C	041		04	146	0181.0	0127.0
1317	0772	C	027		03		0182.0	0131.0
1318	0878	C	044		05	126	0162.0	0133.5
1319	0840	C	038		03		0178.0	0133.0
1320	0874	C	043		03		0169.0	0131.0
1321	0756	C	023		04		0181.0	0128.0
1322	0787	C	031		03		0178.0	0131.0
1323	0869	C	041		05		0181.0	0127.0
1324	0799	C	032		03		0182.0	0132.0
1325	0700	C	013		02	116	0181.0	0132.0
1326	0879	C	045		02		0171.0	0130.0
1327	0870	C	041		06		0181.0	0127.0
1328	0523	C	035		03		0182.0	0133.0
1329	0809	C	033		03		0179.0	0132.0
1330	0830	C	037		03		0179.0	0133.0
1331	0757	C	023		05		0181.0	0128.0
1332	0880	C	046		02		0168.0	0130.0

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
1333	0538	C	045		03		0171.0	0130.0
1334	0541	C	034		03		0178.0	0132.0
1335	0540	C	039		03		0182.0	0134.0
1336	0856	C	039		03A		0182.0	0134.0
1337	0534	C	030		03		0179.0	0131.0
1338	0864	C	041		06A	147	0181.0	0127.0
1339	0884	C	047		02		0169.0	0137.0
1340	0535	C	040		03		0181.0	0134.0
1341	0881	C	046		03		0168.0	0130.0
1342	0539	C	045		04		0171.0	0130.0
1343	0781	C	029		03		0180.0	0131.0
1344	0824	C	036		02		0181.0	0133.0
1345	0825	C	036		03		0181.0	0133.0
1346	0888	C	048		02		0170.0	0132.0
1347	0775	C	028		03		0181.0	0131.0
1348	0907	C	052		02		0166.0	0132.0
1349	0663	C	007		03		0179.0	0134.0
1350	0701	C	013		02A	116	0181.0	0132.0
1351	0897	C	050		02		0179.0	0128.0
1352	0680	C	009		01		0180.0	0132.0
1353	0894	C	049		02		0171.0	0132.0
1354	0648	C	006	II	01		0180.0	0133.0
1355	0912	C	053		02		0167.0	0132.0
1356	0551	SFC			SFC			
1357	0889	C	048		03		0170.0	0132.0
1358	0904	C	052		03A	152	0166.0	0132.0
1359	0773	C	027		04		0182.0	0131.0
1360	0857	C	039		04		0182.0	0134.0
1361	0885	C	047		03		0169.0	0137.0
1362	0664	C	007		04	150	0179.0	0134.0
1363	0911	C	053		2A	152	0167.0	0132.0
1364	0774	C	027		05		0182.0	0131.0
1365	0895	C	049		03		0171.0	0132.0
1366	0858	C	039		05		0182.0	0134.0
1367	0800	C	032		04		0182.0	0132.0
1368	0913	C	053		03		0167.0	0132.0
1369	0891	C	048		04A	157	0170.0	0132.0
1370	0633	C	004				0180.0	0134.0
1371	0908	C	052		03		0166.0	0132.0
1372	0863	C	040		04		0181.0	0134.0
1373	0813	C	034		04	150	0178.0	0132.0
1374	0776	C	028		04		0181.0	0131.0
1375	0909	C	052		04		0166.0	0132.0
1376	0821	C	035		04		0182.0	0133.0
1377	0777	C	028		05		0181.0	0131.0
1378	0910	C	052		05		0166.0	0132.0
1379	0905	C	052		05A	166	0166.0	0132.0
1380	0782	C	029		04		0180.0	0131.0
1381	0906	C	052		05B	166	0166.0	0132.0
1382	0784	C	030		03B		0179.0	0131.0
1383	0826	C	036		04		0181.0	0133.0
1384	0694	C	012		03	149	0178.0	0134.0
1385	0783	C	029		05		0180.0	0131.0
1386	0914	C	054		02		0170.0	0130.0
1387	0915	C	054		03		0170.0	0130.0
1388	0681	C	009		02		0180.0	0132.0
1389	0920	C	056		02		0165.0	0132.0
1390	0682	C	009		03		0180.0	0132.0
1391	0903	C	051		02		0178.0	0129.0
1392	0898	C	050		02		0179.0	0128.0
1393	0917	C	055		02		0169.0	0128.0
1394	0899	C	050		03	153	0179.0	0128.0
1395	0900	C	050		03A	153	0179.0	0128.0

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
1396	0901	C	050		04	153	0179.0	0128.0
1397	0902	C	050		05	153	0179.0	0128.0
1398	0785	C	030		04		0179.0	0131.0
1399	0649	C	006		02		0180.0	0133.0
1400	0859	C	039		06		0182.0	0134.0
1401	0828	C	037		04a	150	0179.0	0133.0
1402	0918	C	055		03		0169.0	0128.0
1403	0860	C	039		07		0182.0	0134.0
1404	0702	C	013		03	116	0181.0	0132.0
1405	0916	C	054		04	157	0170.0	0130.0
1406	0778	C	028		06		0181.0	0131.0
1407	0861	C	039		08		0182.0	0134.0
1408	0935	C	059		02		0169.0	0129.0
1409	0921	C	056		03		0165.0	0132.0
1410	0862	C	039		09		0182.0	0134.0
1411	0924	C	057		02		0178.0	0130.0
1412	0883	C	042		na	177	0169.0	0137.0
1413	0779	C	028		08		0181.0	0131.0
1414	0882	C	046		04	171	0168.0	0130.0
1415	0827	C	036		05		0181.0	0133.0
1416	0936	C	059		03		0169.0	0129.0
1417	0898	C	050		02		0179.0	0128.0
1418	0780	C	028		09		0181.0	0131.0
1419	0932	C	058		02		0164.0	0132.0
1420	0938	C	060		02		0183.0	0131.0
1421	1110	D	014		02		0212.0	0121.0
1422	0810	C	033		04		0179.0	0132.0
1423	0908	C	052		03		0166.0	0132.0
1424	0939	C	060		02		0183.0	0131.0
1425	1395	E	047		SFC	194	0226.0	0147.0
1426	1396	E	047		01	194	0226.0	0147.0
1427	1397	E	047		02	194	0226.0	0147.0
1428	1527	C	037		04		0179.0	0133.0
1429	0811	C	033		05		0179.0	0132.0
1430	0801	C	032		05		0182.0	0132.0
1431	0940	C	060		03	191	0183.0	0131.0
1432	0552	SFC			SFC			
1433	0802	C	032		06		0182.0	0132.0
1434	0814	C	034		05		0178.0	0132.0
1435	0831	C	037		05		0179.0	0133.0
1436	1398	E	047		03	194	0226.0	0147.0
1437	0803	C	032		07		0182.0	0132.0
1438	0815	C	034		06		0178.0	0132.0
1439	1399	E	047		04	194	0226.0	0147.0
1440	0650	C	006		03		0180.0	0133.0
1441	0822	C	035		05		0182.0	0133.0
1442	0651	C	006		04		0180.0	0133.0
1443	0703	C	013		04	116	0181.0	0132.0
1444	0804	C	032		08		0182.0	0132.0
1445	0652	C	006		05		0180.0	0133.0
1446	0841	C	038		04		0178.0	0133.0
1447	0941	C	060		04	209	0183.0	0131.0
1448	0939	C	060		02		0183.0	0131.0
1449	1399	E	047		04	194	0226.0	0147.0
1450	1400	E	047		05	194	0226.0	0147.0
1451	0653	C	006		06		0180.0	0133.0
1452	0942	C	060		05		0183.0	0131.0
1453	0805	C	032		09	197	0182.0	0132.0
1454	1401	E	047		06	194	0226.0	0147.0
1455	1402	E	047		07	194	0226.0	0147.0
1456	0695	C	012		04		0178.0	0134.0
1457	1403	E	047		08	194	0226.0	0147.0
1458	1403	E	047		08	194	0226.0	0147.0

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
1459	0816	C	034		07		0178.0	0132.0
1460	1404	E	047		09	194	0226.0	0147.0
1461	1405	E	047		10	194	0226.0	0147.0
1462	0842	C	038		05		0178.0	0133.0
1463	0843	C	038		06	150	0178.0	0133.0
1464	0844	C	038		07		0178.0	0133.0
1465	1406	E	047		11	194	0226.0	0147.0
1466	1407	E	047		12	194	0226.0	0147.0
1467	0845	C	038		08	202	0178.0	0133.0
1468	0704	C	013		01	116	0181.0	0132.0
1469	0846	C	038		09		0178.0	0133.0
1470	0705	C	013		02	116	0181.0	0132.0
1471	1408	E	047		14	194	0226.0	0147.0
1472	1409	E	047		14	194	0226.0	0147.0
1473	1410	E	047		14	194	0226.0	0147.0
1474	0706	C	013		03	116	0181.0	0132.0
1475	0707	C	013		04	116	0181.0	0132.0
1476	0832	C	037		06	150	0179.0	0133.0
1477	0833	C	037		07		0179.0	0133.0
1478	0944	C	060		05B		0183.0	0131.0
1479	0945	C	060		05A		0183.0	0131.0
1480	0943	C	060		05B		0183.0	0131.0
1481	0819	C	034			154	0178.0	0132.0
1482	0834	C	037		09		0179.0	0133.0
1483	0835	C	037		10	150	0179.0	0133.0
1484	0847	C	038		10	205A	0178.0	0133.0
1485	0848	C	038		10	205B	0178.0	0133.0
1486	0665	C	007		05		0179.0	0134.0
1487	0666	C	007		06		0179.0	0134.0
1488	0667	C	007		07	150	0179.0	0134.0
1489	0668	C	007		08	151	0179.0	0134.0
1490	0669	C	007		09		0179.0	0134.0
1491	0670	C	007		10	150	0179.0	0134.0
1492	0671	C	007		11		0179.0	0134.0
1493	0672	C	007		12		0179.0	0134.0
1494	0660	C	007		13	201	0179.0	0134.0
1495	0659	C	007				0179.0	0134.0
1496	0872	C	042		03		0169.0	0130.0
1497	0836	C	037		12	200	0179.0	0133.0
1498	0946	C	060		06	210	0183.0	0131.0
1499	0708	C	013		05	116	0181.0	0132.0
1500	0947	C	060		07		0183.0	0131.0
1501	0963	C	062		02		0165.0	0138.0
1502	0709	C	013		06	116	0181.0	0132.0
1503	0925	C	057		03		0178.0	0130.0
1504	0955	C	061		02		0165.0	0137.0
1505	0673	C	007		15	150	0179.0	0134.0
1506	0849	C	038		12	205A	0178.0	0133.0
1507	0850	C	038		12	205B	0178.0	0133.0
1508	0851	C	038		13	206	0178.0	0133.0
1509	0710	C	013		08	116	0181.0	0132.0
1510	0964	C	062		03		0165.0	0138.0
1511	0948	C	060		08	209	0183.0	0131.0
1512	0926	C	057		05		0178.0	0130.0
1513	0674	C	007		16		0179.0	0134.0
1514	0711	C	013		09	116	0181.0	0132.0
1515	0927	C	057		06		0178.0	0130.0
1516	0675	C	007		17		0179.0	0134.0
1517	1529	C	007				0179.0	0134.0
1518	0712	C	013		10	116	0181.0	0132.0
1519	0928	C	057		07		0178.0	0130.0
1520	0949	C	060		09		0183.0	0131.0
1521	0950	C	060		09A	191	0183.0	0131.0

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
1522	0713	C	013		11	116	0181.0	0132.0
1523	0852	C	038		14		0178.0	0133.0
1524	0714	C	013		12	116	0181.0	0132.0
1525	0929	C	057		08		0178.0	0130.0
1526	0956	C	061		03		0165.0	0137.0
1527	0853	C	038		15	150	0178.0	0133.0
1528	0930	C	057		10		0178.0	0130.0
1529	0965	C	062		04		0165.0	0138.0
1530	0951	C	060		10		0183.0	0131.0
1531	0952	C	060		10A	191	0183.0	0131.0
1532	0788	C	031		04	150	0178.0	0131.0
1533	0715	C	013		13	116	0181.0	0132.0
1534	0724	C	015		04	150	0177.0	0129.0
1535	0854	C	038		17		0178.0	0133.0
1536	0957	C	061		04		0165.0	0137.0
1537	0789	C	031		05	222	0178.0	0131.0
1538	0837	C	037		15	195B	0179.0	0133.0
1539	0654	C	006		07	199	0180.0	0133.0
1540	0655	C	006		08	200	0180.0	0133.0
1541	0656	C	006		09	204	0180.0	0133.0
1542	0657	C	006		10	218	0180.0	0133.0
1543	0658	C	006		11		0180.0	0133.0
1544	0966	C	062		05		0165.0	0138.0
1545	0838	C	037		16	200B	0179.0	0133.0
1546	0716	C	013		14	116	0181.0	0132.0
1547	0967	C	062		06	215B	0165.0	0138.0
1548	0790	C	031		06		0178.0	0131.0
1549	0954	C	060		11A	191	0183.0	0131.0
1550	0953	C	060		11	191	0183.0	0131.0
1551	0937	C	060		07		0183.0	0131.0
1552	0791	C	031		07		0178.0	0131.0
1553	0855	C	038		18		0178.0	0133.0
1554	0792	C	031		08		0178.0	0131.0
1555	0958	C	061		05		0165.0	0137.0
1556	0793	C	031		09	150	0178.0	0131.0
1557	0968	C	062		07	132	0165.0	0138.0
1558	0794	C	031		10		0178.0	0131.0
1559	0770	C	027		03		0182.0	0131.0
1560	0717	C	013		15	116	0181.0	0132.0
1561	0969	C	062		08		0165.0	0138.0
1562	0795	C	031		11		0178.0	0131.0
1563	0970	C	062		09		0165.0	0138.0
1564	0763	C	025				0177.0	0130.0
1565	0725	C	015		05C	223	0177.0	0129.0
1566	0718	C	013		16	116	0181.0	0132.0
1567	1115	D	015		02		0214.0	0132.0
1568	0574	C			SFC			
1570	0959	C	061		06		0165.0	0137.0
1571	0971	C	062		10		0165.0	0138.0
1572	1111	D	014		03		0212.0	0121.0
1573	1112	D	014		04		0212.0	0121.0
1574	0972	C	062		11		0165.0	0138.0
1575	1116	D	015		03		0214.0	0132.0
1576	1113	D	014		05		0212.0	0121.0
1577	0632	C	004				0180.0	0134.0
1578	0973	C	062		12	215B	0165.0	0138.0
1579	1114	D	014		06		0212.0	0121.0
1580	1117	D	015		04		0214.0	0132.0
1581	0719	C	013		17	116	0181.0	0132.0
1582	1144	D	020		02		0210.0	0118.0
1583	1125	D	017		02		0210.0	0133.0
1584	1126	D	017		05		0210.0	0133.0
1585	1118	D	015		05		0214.0	0132.0

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	STING
1586	0890	C	048		04		0170.0	132.0
1587	1127	D	017		06		0210.0	133.0
1588	1119	D	015		06		0214.0	132.0
1589	0896	C	049		04		0171.0	32.0
1590	1138	D	019		02		0210.0	122.0
1591	1128	D	017		08		0210.0	133.0
1592	1139	D	019		03		0210.0	22.0
1593	1145	D	020		03		0210.0	118.0
1594	0974	C	063		02		0175.0	134.0
1595	0975	C	063		03		0175.0	134.0
1596	0981	C	064		02		0166.0	138.0
1597	1130	D	018		02		0210.0	126.0
1598	0960	C	061		07		0165.0	137.0
1599	1140	D	019		05		0210.0	0122.0
1600	1131	D	018		03		0210.0	0126.0
1601	0893	C	048		05A	23[illegible]	0170.0	0132.0
1602	0892	C	048		05		0170.0	0132.0
1603	1141	D	019		06		0210.0	0122.0
1604	0806	C	032		10	197	0182.0	132.0
1605	1120	D	016		02	231	0216.0	0128.0
1606	1121	D	016		03	231	0216.0	0128.0
1607	1122	D	016		04	231	0216.0	0[illegible]28.0
1608	1123	D	016		05	231	0216.0	012[illegible]0
1609	0982	C	064		03		0166.0	013[illegible]
1610	1146	D	020		04		0210.0	0[illegible]18.0
1611	1132	D	018		04		0210.0	0126.0
1612	1519	I			02			
1613	1520	I			04			
1614	1133	D	018		05		0210.0	0126.0
1615	1147	D	020		05		0210.0	0118.0
1616	0977	C	063		05	232	0175.0	0134.0
1617	0978	C	063		05	232	0175.0	0134.0
1618	1142	D	019		07		0210.0	0122.0
1619	1134	D	018		06		0210.0	0126.0
1620	0976	C	063		04		0175.0	0134.0
1621	1143	D	019		08		0210.0	0122.0
1622	0983	C	064		04		0166.0	0138.0
1623	0984	C	064		05	132	0166.0	0138.0
1624	0985	C	064		06		0166.0	0138.0
1625	0979	C	063		10		0175.0	0134.0
1626	1149	D	021		02		0214.0	0124.0
1627	1124	D	016		06		0216.0	0128.0
1628	0986	C	064		07		0166.0	0138.0
1629	0728	C	015		06	216B	0177.0	0129.0
1630	1180	D	027		02		0216.0	0122.0
1631	0992	C	065		02		0164.0	0133.0
1632	1204	D	031		02		0209.0	0131.0
1633	1153	D	021		03A	240B	0214.0	0124.0
1634	1205	D	031		03		0209.0	0131.0
1635	1206	D	031		04		0209.0	0131.0
1636	1207	D	031		05		0209.0	0131.0
1637	0993	C	065		03		0164.0	0133.0
1638	0980	C	063		11		0175.0	0134.0
1639	0575	C			SFC			
1640	0988	C	064		09	228	0166.0	0138.0
1641	0807	C	032		11	197	0182.0	0132.0
1642	0796	C	031		12	150	0178.0	0131.0
1643	1208	D	031		06		0209.0	0131.0
1644	1181	D	027		03		0216.0	0122.0
1645	0989	C	064		10		0166.0	0138.0
1646	1150	D	021		03		0214.0	0124.0
1647	0990	C	064		11	228	0166.0	0138.0
1648	0994	C	065		04		0164.0	0133.0

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
1649	0919	C	056		05	183	0165.0	0132.0
1650	0922	C	056		04	168	0165.0	0132.0
1651	0931	C	058		03	189	0164.0	0132.0
1652	1151	D	021		04		0214.0	0124.0
1653	0727	C	015		05A	124A	0177.0	0129.0
1654	0726	C	015		05	124B	0177.0	0129.0
1655	0987	C	064		08		0166.0	0138.0
1656	0797	C	031		14		0178.0	0131.0
1657	1182	D	027		04		0216.0	0122.0
1658	0997	C	066		02		0166.0	0134.0
1659	1154	D	022		02		0206.0	0131.0
1660	1155	D	022		03		0206.0	0131.0
1661	1156	D	022		04		0206.0	0131.0
1662	0729	C	015		06A	216A	0177.0	0129.0
1663	0995	C	065		05		0164.0	0133.0
1664	0923	C	056		06		0165.0	0132.0
1665	1187	D	028		04		0217.0	0117.0
1666	1152	D	021		05		0214.0	0124.0
1667	0934	C	058		06	228	0164.0	0132.0
1668	0961	C	061		08	228	0165.0	0137.0
1669	1186	D	028		02		0217.0	0117.0
1670	0886	C	047		05	132	0169.0	0137.0
1671	0998	C	066		03	243	0166.0	0134.0
1672	1184	D	028		05B	241	0217.0	0117.0
1673	1185	D	028		05A	241	0217.0	0117.0
1674	0817	C	034		08		0178.0	0132.0
1675	0818	C	034		09	154	0178.0	0132.0
1676	0962	C	061		09		0165.0	0137.0
1677	1148	D	021				0214.0	0124.0
1678	0933	C	058		05		0164.0	0132.0
1679	1199	D	030		02		0212.0	0111.0
1680	1188	D	028		05D	242	0217.0	0117.0
1681	1189	D	028		05C	242	0217.0	0117.0
1682	1135	D	018		07		0210.0	0126.0
1683	1168	D	025		02		0212.0	0133.0
1684	1169	D	025		03		0212.0	0133.0
1685	1170	D	025		04		0212.0	0133.0
1686	1200	D	030		03		0212.0	0111.0
1687	1104	D	012		03	241	0216.0	0110.0
1688	0996	C	065		06		0164.0	0133.0
1689	1190	D	028		05F	245	0217.0	0117.0
1690	1191	D	028		05E	245	0217.0	0117.0
1691	1192	D	028		06		0217.0	0117.0
1692	1136	D	018		08		0210.0	0126.0
1693	0991	C	064		12		0166.0	0138.0
1694	1195	D	029		02		0217.0	0114.0
1695	1107	D	013		02		0213.5	0109.0
1696	1172	D	026		02		0215.0	0136.0
1697	1201	D	030		04		0212.0	0111.0
1698	1129	D	018				0210.0	0126.0
1699	1193	D	028		07		0217.0	0117.0
1700	1202	D	030		05		0212.0	0111.0
1701	1108	D	013		03		0213.5	0109.0
1702	1105	D	012		05		0216.0	0110.0
1703	1194	D	028		08		0217.0	0117.0
1704	1203	D	030		06		0212.0	0111.0
1705	1162	D	024		02		0205.0	0135.0
1706	1196	D	029		03		0217.0	0114.0
1707	1197	D	029		04		0217.0	0114.0
1708	1163	D	024		03		0205.0	0135.0
1709	1198	D	029		05		0217.0	0114.0
1710	1109	D	013		04		0213.5	0109.0
1711	1164	D	024		04	247	0205.0	0135.0

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
1712	1157	D	023		02		0203.0	0132.0
1713	1165	D	024		05		0205.0	0135.0
1714	1173	D	026		03		0215.0	0136.0
1715	1174	D	026		04		0215.0	0136.0
1716	1175	D	026		05		0215.0	0136.0
1717	1176	D	026		06		0215.0	0136.0
1718	1177	D	026		07		0215.0	0136.0
1719	1171	D	026				0215.0	0136.0
1720	1166	D	024		06		0205.0	0135.0
1721	1158	D	023		03		0203.0	0132.0
1722	1159	D	023		04		0203.0	0132.0
1723	1419	E	049		02		0224.0	0122.0
1724	1167	D	024		07		0205.0	0135.0
1725	1183	D	027		05		0216.0	0122.0
1726	1160	D	023		05		0203.0	0132.0
1727	1420	E	049		03		0224.0	0122.0
1728	1430	E	051		02		0226.0	0125.0
1729	1434	E	052		02		0226.0	0133.0
1730	1435	E	052		03		0226.0	0133.0
1731	1436	E	052		04		0226.0	0133.0
1732	1161	D	023		06		0203.0	0132.0
1733	1431	E	051		03		0226.0	0125.0
1734	1421	E	049		04		0224.0	0122.0
1735	1462	E	058		03		0226.0	0117.0
1736	1463	E	058		04		0226.0	0117.0
1737	1464	E	058		05		0226.0	0117.0
1738	1432	E	051		04		0226.0	0125.0
1739	1437	E	052		05		0226.0	0133.0
1740	1422	E	049		05		0224.0	0122.0
1741	1210	D	032		02		0217.0	0122.0
1742	1448	E	055		02		0233.0	0113.0
1743	1423	E	049		06		0224.0	0122.0
1744	1449	E	055		03		0233.0	0113.0
1745	1424	E	049		07		0224.0	0122.0
1746	1211	D	032		03		0217.0	0122.0
1747	1438	E	053		02		0225.0	0113.0
1748	1433	E	051		06		0226.0	0125.0
1749	1425	E	050		03		0228.0	0122.0
1750	1439	E	053		03		0225.0	0113.0
1751	1212	D	032		04	248	0217.0	0122.0
1752	1450	E	055		04		0233.0	0113.0
1753	1426	E	050		04		0228.0	0122.0
1754	1213	D	032		05		0217.0	0122.0
1755	1440	E	053		04		0225.0	0113.0
1756	1427	E	050		05		0228.0	0122.0
1757	1441	E	053		05		0225.0	0113.0
1758	1451	E	055		05		0233.0	0113.0
1759	1470	E	059		02		0223.0	0108.0
1760	1471	E	059		03		0223.0	0108.0
1761	1442	E	053		06		0225.0	0113.0
1762	1214	D	032		06		0217.0	0122.0
1763	1428	E	050		06		0228.0	0122.0
1764	1429	E	050		07		0228.0	0122.0
1765	1452	E	055		06		0233.0	0113.0
1766	1472	E	059		04		0223.0	0108.0
1767	1465	E	058		06		0226.0	0117.0
1768	1466	E	058		08		0226.0	0117.0
1769	1467	E	058		10	251	0226.0	0117.0
1770	1468	E	058		12	251	0226.0	0117.0
1771	1444	E	054		02		0230.0	0114.0
1772	1445	E	054		03		0230.0	0114.0
1773	1446	E	054		04		0230.0	0114.0
1774	1453	E	055		07	253	0233.0	0113.0

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
1775	1473	E	059		05		0223.0	0108.0
1776	1469	E	059		01-05		0223.0	0108.0
1777	1474	E	060		02		0226.0	0106.0
1778	1475	E	060		03		0226.0	0106.0
1779	1447	E	054		05		0230.0	0114.0
1780	1443	E	054		01-04		0230.0	0114.0
1781	1456	E	056		02		0230.0	0110.0
1782	1457	E	056		03		0230.0	0110.0
1783	1411	E	048		02		0222.0	0118.0
1784	1458	E	056		04		0230.0	0110.0
1785	1412	E	048		03		0222.0	0118.0
1786	1477	E	060		05		0226.0	0106.0
1787	1476	E	060		04		0226.0	0106.0
1788	1459	E	056		05		0230.0	0110.0
1789	1460	E	056		06		0230.0	0110.0
1790	1413	E	048		04		0222.0	0118.0
1791	1215	D	033		02		0215.0	0122.5
1792	1216	D	033		03		0215.0	0122.5
1793	1461	E	056		07		0230.0	0110.0
1794	1454	E	055		08	253	0233.0	0113.0
1795	1455	E	055		09	253	0233.0	0113.0
1796	1414	E	048		05		0222.0	0118.0
1797	1415	E	048		06		0222.0	0118.0
1798	1416	E	048		07	256	0222.0	0118.0
1799	1219	D	033		05	248	0215.0	0122.5
1800	1417	E	048		08		0222.0	0118.0
1801	1217	D	033		04		0215.0	0122.5
1802	1218	D	033		05		0215.0	0122.5
1803	1222	D	033		05	254	0215.0	0122.5
1804	1178	D	027			250	0216.0	0122.0
1805	1209	D	032			252	0217.0	0122.0
1806	1221	D	033		05	254	0215.0	0122.5
1807	1220	D	033		05	255	0215.0	0122.5
1808	1179	D	027			249	0216.0	0122.0
1809	1418	E	048		09		0222.0	0118.0
1810	0999	C	066		04		0166.0	0134.0
1811	1000	C	066		05		0166.0	0134.0
1812	0887	C	047		06		0169.0	0137.0
1813	0747	C	019		03	134	0170.0	0136.0
1814	0748	C	019		04	134	0170.0	0136.0
1815	0749	C	019		05	134A	0170.0	0136.0
1816	0750	C	019	II	06		0170.0	0136.0
1817	1522	I	TR 17		02		0358.0	0102.0
1818	1524	I	TR 17		03		0358.0	0102.0
1819	1523	I	TR 17		02		0358.0	0102.0
1820	1525	I	TR 17		03		0358.0	0102.0
1821	0643	C	006		05	116	0180.0	0133.0
1822	1137	D	019				0210.0	0122.0
1823	0580	C	TR 4		TR		0172.0	0128.0
1824	0577	C			SMP	116		
1825	1006	D			SMP	115		
1826	1010	D	016		SMP	231	0216.0	0128.0
1827	1005	D			SMP			
1828	1007	D			SMP	115		
1829	1008	D			SMP	115		
1830	1227	E			SMP	033		
1831	1226	E			SMP	030		
1832	1225	E			SMP	029		
1833	1228	E			SMP	033		
1834	1009	D			SMP	135		
1835	1229	E			SMP	099		
1836	0812	C	033		05		0179.0	0132.0
1837	1528							

Table 1, continued

FS #	CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	NORTHING	EASTING
1838	1292	E	009	V	01	070	0236.0	0123.0
1839	1291	E	009	IV	01	070	0236.0	0123.0
1840	1085	D	006	VI	02	084	0209.5	0128.5
1841	1344	E	027A	III	01	96-100	0225.5	0109.0
1842	1331	E	023	III	01	037	0226.5	0120.5
1843	1320	E	017	III	01	031	0239.0	1153.0
1844	0676	C	008	I	01		0161.0	0134.0
1845	0744	C	019	I	01		0120.0	0136.0
1846	0732	C	017	I	01		0179.0	0136.0
1847	0678	C	008	III	01		0161.0	0134.0
1848	0686	C	010	I	01		0166.0	0130.0
1849	0645	C	006	I	01		0180.0	0133.0
1850	0641	C	005	III	01		0168.0	0134.0
1851	1302	E	014	II	01	026	0228.0	0116.0
1852	1283	E	008	V	01	070	0239.0	0120.5
1853	1275	E	006	III	01	051	0241.0	0115.1
1854	1095	D	009	III	01	085	0213.0	0126.0
1855	0751	C	020	II	01		0186.0	0126.0
1856	0678	C	008	III	01		0161.0	0134.0
1857	1244	E	001	X	02	048	0224.0	0114.0
1858	1380	E	036	II	01		0235.0	0120.5
1859	1320	E	017	III	01	031	0239.0	0115.0
1860	1315	E	016	III	02		0238.0	0113.5
1861	1277	E	007	III	01	066	0239.0	0118.0
1862	1290	E	009	III	01	035	0236.0	0123.0
1863	0504	E	013	II	02	027	0229.0	0119.0
1864	1067	D	004	IV	01	089	0214.5	0113.5
1865	1100	D	010	II	01		0198.0	0128.0
1866	1284	E	008	VI	01	070	0239.0	0130.5
1867	1093	D	009	I	01	085	0213.0	0126.0
1868	1296	E	010	III	01	034	0234.0	0123.5
1869	1270	E	005	III	01	030	0236.0	0116.0
1870	1347	E	027B	III	01	119	0226.0	0109.0
1871	1069	D	004	V	01	089	0214.5	0113.5
1872	0732	C	017	I	01		0179.0	0136.0
1873	0661	C	007	I	01		0179.0	0134.0
1874	1075	D	005	III	01	115	0218.0	0123.0
1875	1106	D	013	I	01		0213.5	0109.0
1876	0636	C	004	III	01		0180.0	0134.0
1877	0735	C	017	III	01		0179.0	0136.0
1878	0739	C	018	I	01		0174.0	0117.0
1879	1102	D	012	I	01		0216.0	0110.0
1880	0737	C	017	IV	01	131	0179.0	0136.0
1881	0678	C	008	III	01		0161.0	0134.0
1882	0737	C	017	IV	01	131	0179.0	0136.0
1883	0509	C	004	III	02		0180.0	0134.0
1884	0744	C	019	I	01		0170.0	0136.0
1885	1075	D	005	III	01	115	0218.0	0126.0
1886	0661	C	007	I	01		0179.0	0134.0
1887	0645	C	006	I	01		0180.0	0133.0
1888	1314	C	016	III	01		0238.0	0113.5

Table 2. List of Catalog Numbers and Proveniences from Site 16PC62.

CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	BLOCK ANALYTICAL UNIT	SITE ANALYTICAL UNIT
0495	F	004		09	043		16
0496	F	004		08	043		16
0497	F	004		07	043		16
0498	F	001			043		16
0499	F	011			043		16
0500	F	004		10	043		16
0501	F	004		05	043		16
0502	F			SFC		00	01
0503	C			TR		24	03
0504	E	013	II	02	027	09	09
0505	D			UMS		02	02
0506	D			UMS		02	02
0507	SFC			SFC			16
0508	F	002		02	043		16
0509	C	004	III	02		02	08
0510	SFC			SFC			03
0511	C			UMS		22	02
0512	D	011	I	01	057	05	09
0513	SFC			SFC			03
0514	SFC			SFC			16
0515	E	028	II	01	098	11	12
0516	C			UMS		22	02
0517	E	003	III	01	028	09	09
0518	D	007	III	01		05	09
0519	C			SFC		23	03
0520	C	034		02		07	09
0521	E			SFC		02	02
0522	F	005	III	01			16
0523	C	035		03		06	11
0524	D			UMS		02	02
0525	C	039		02		07	09
0526	C	002		01		03	13
0527	C			GB		25	03
0528	C	040		02		06	11
0529	C	002	I	GB		10	08
0530	C	004	I	03		05	09
0531	C	030		02		05	09
0532	C	028		02		07	09
0533	C			SFC		25	01
0534	C	030		03		05	09
0535	C	040		03		06	11
0536	C	029		02		07	09
0537	C			UMS		22	02
0538	C	045		03		03	13
0539	C	045		04		10	08
0540	C	039		03		06	11
0541	C	034		03		07	09
0542	E	028	III	01	098	09	09
0543	D			UMS		02	02
0544	D	007	V	01		08	10
0545	C	012	I	02		06	11
0546	C			UMS		22	02
0547	F				043		16
0548	SFC			SFC			03
0549	SFC			SFC			03

Table 2, continued

CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	BLOCK ANALYTICAL UNIT	SITE ANALYTICAL UNIT
0550	SFC			SFC			03
0551	SFC			SFC			01
0552	SFC			SFC			01
0553	SFC			SFC			01
0554	SFC			SFC			01
0555	SFC			SFC			01
0556	SFC			SFC			01
0557	SFC			SFC			01
0558	SFC			SFC			01
0559	SFC			SFC			01
0560	SFC			SFC			01
0561	SFC			SFC			01
0562	SFC			SFC			01
0563	SFC			SFC			01
0564	SFC			SFC			01
0565	SFC			SFC			01
0566	SFC			SFC			01
0567	SFC			SFC			01
0568	SFC			SFC			01
0569	SFC			SFC			01
0570	SFC			SFC			01
0571	SFC			SFC			01
0572	SFC			SFC			01
0573	SFC			UMS			01
0574	C			SFC		25	01
0575	C			SFC		25	01
0576	C			UMS		22	02
0577	C			SMP	116	04	15
0578	C			GB		25	03
0579	C			GB		25	03
0580	C			TR		24	03
0581	C			UMS		22	02
0582	C			UMS		22	02
0583	C			UMS		22	02
0584	C			UMS		22	02
0585	C			UMS		22	02
0586	C			UMS		22	02
0587	C			UMS		22	02
0588	C			UMS		22	02
0589	C			SFC		25	01
0590	C			UMS		22	02
0591	C			UMS		22	02
0592	C			UMS		22	02
0593	C			UMS		22	02
0594	C			UMS		22	02
0595	C			UMS		22	02
0596	C			UMS		22	02
0597	C			UMS		22	02
0598	C			UMS		22	02
0599	C			UMS		22	02
0600	C			UMS		22	02
0601	C			UMS		22	02
0602	C			UMS		22	02
0603	C			UMS		22	02
0604	C			UMS		22	02

Table 2, continued

CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	BLOCK ANALYTICAL UNIT	SITE ANALYTICAL UNIT
0605	C			SFC		25	01
0606	C			UMS		22	02
0607	C			UMS		22	02
0608	C			UMS		22	02
0609	C			UMS		22	02
0610	C			UMS		22	02
0611	C			UMS		22	02
0612	C			UMS		22	02
0613	C			UMS		22	02
0614	C			UMS		22	02
0615	C			UMS		22	02
0616	C			UMS		22	02
0617	C			SFC	014	13	04
0618	C			UMS	011	22	02
0619	C			TR		24	03
0620	C			TR		24	03
0621	C			TR		24	03
0622	C			TR		24	03
0623	C			TR		24	03
0624	C			TR		24	03
0625	C			TR		23	03
0626	C		I	01	011	10	08
0627	C	001		SFC	004	25	02
0628	C	001	I	01		10	08
0629	C	002		02		10	08
0630	C	002			006	10	08
0631	C	003		01		03	13
0632	C	004				00	03
0633	C	004				00	03
0634	C	004	I	01		05	09
0635	C	004	I	02		05	09
0636	C	004	III	01		02	08
0637	C	004	III	03		02	08
0638	C	005				00	03
0639	C	005	I	01		16	09
0640	C	005	II	01		03	13
0641	C	005	III	01		18	08
0642	C	005	IV	01		18	08
0643	C	006		05	116	08	15
0644	C	006	I	01		05	09
0645	C	006	I	01		05	09
0646	C	006	I	02		06	11
0647	C	006	I	02		06	11
0648	C	006	II	01		05	09
0649	C	006		02		05	09
0650	C	006		03		05	09
0651	C	006		04		04	15
0652	C	006		05		08	15
0653	C	006		06		02	08
0654	C	006		07	199	01	05
0655	C	006		08	200	02	08
0656	C	006		09	204	01	05
0657	C	006		10	218	01	05
0658	C	006		11		01	05
0659	C	007		na		00	03

Table 2, continued

CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	BLOCK ANALYTICAL UNIT	SITE ANALYTICAL UNIT
0660	C	007		13	201	01	[illegible]
0661	C	007	I	01		05	[illegible]
0662	C	007	I	02		05	[illegible]
0663	C	007		03		05	[illegible]
0664	C	007		04	150	09	[illegible]
0665	C	007		05		02	[illegible]
0666	C	007		06		03	[illegible]
0667	C	007		07	150	09	[illegible]
0668	C	007		08	151	04	[illegible]
0669	C	007		09		05	[illegible]
0670	C	007		10	150	09	[illegible]
0671	C	007		11		10	[illegible]
0672	C	007		12		05	[illegible]
0673	C	007		15	150	09	[illegible]
0674	C	007		16		10	[illegible]
0675	C	007		17		02	[illegible]
0676	C	008	I	01		11	09
0677	C	008	II	01		03	13
0678	C	008	III	01		10	08
0679	C	008	IIIA	01		10	08
0680	C	009		01		06	11
0681	C	009		02		05	09
0682	C	009		03		04	15
0683	C	009	I	01		07	09
0684	C	009	I	02		06	11
0685	C	009	I	02		06	11
0686	C	010	I	01		11	09
0687	C	010	II	01		03	13
0688	C	011	I	01	14	12	04
0689	C	011	II	01	14	13	04
0690	C	011	II	02	14	13	04
0691	C	011	II	03	14	13	04
0692	C	011	II	04	14	13	04
0693	C	011	II	05	14	13	04
0694	C	012		03	149	11	09
0695	C	012		04		11	09
0696	C	012	I	01		07	09
0697	C	013	I	01	116	07	09
0698	C	013	I	02	116	06	11
0699	C	013	I	03	116	05	09
0700	C	013		02	116	06	11
0701	C	013		02A	116	06	11
0702	C	013		03	116	05	09
0703	C	013		04	116	04	15
0704	C	013		01	116	04	15
0705	C	013		02	116	04	15
0706	C	013		03	116	04	15
0707	C	013		04	116	04	15
0708	C	013		05	116	04	15
0709	C	013		06	116	04	15
0710	C	013		08	116	04	15
0711	C	013		09	116	04	15
0712	C	013		10	116	02	08
0713	C	013		11	116	04	15
0714	C	013		12	116	04	15

Table 2, continued

CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	BLOCK ANALYTICAL UNIT	SITE ANALYTICAL UNIT
0715	C	013		13	116	02	08
0716	C	013		14	116	02	08
0717	C	013		15	116	04	15
0718	C	013		16	116	02	08
0719	C	013		17	116	02	08
0720	C	014	I	01		11	09
0721	C	014	II	01		03	13
0722	C	015	I	01		07	09
0723	C	015	I	02		07	09
0724	C	015		04	150	03	13
0725	C	015		05C	223	04	15
0726	C	015		05	124B	01	05
0727	C	015		05A	124A	01	05
0728	C	015		06	216B	01	05
0729	C	015		06A	216A	01	05
0730	C	016	I	01		07	09
0731	C	016		02	125	01	05
0732	C	017	I	01		11	09
0733	C	017	I	02		11	09
0734	C	017	II	01		03	13
0735	C	017	III	01		10	08
0736	C	017	III	02		10	08
0737	C	017	IV	01	131	10	08
0738	C	017	IV	02	131	10	08
0739	C	018	I	01		11	09
0740	C	018	II	01		03	13
0741	C	018	II	02		03	13
0742	C	018			128	12	04
0743	C	018			129	12	04
0744	C	019	I	01		11	09
0745	C	019	II	01		03	13
0746	C	019	III	01	132	03	13
0747	C	019		03	134	03	13
0748	C	019		04	134	03	13
0749	C	019		05	134A	03	13
0750	C	019	II	06		10	08
0751	C	020	II	01		11	09
0752	C	020	II	02		11	09
0753	C	021	I	01		11	09
0754	C	023		02		05	09
0755	C	023		03		05	09
0756	C	023		04		05	09
0757	C	023		05		04	15
0758	C	024		02		11	09
0759	C	024		03		03	13
0760	C	024		04		03	13
0761	C	024		05		10	08
0762	C	024		06	126	10	08
0763	C	025				13	04
0764	C	025		01		07	09
0765	C	025		02		07	09
0766	C	025		03		04	15
0767	C	026		01		07	09
0768	C	026		02		07	09
0769	C	026		03		04	15

Table 2, continued

CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	BLOCK ANALYTICAL UNIT	SITE ANA[illegible]L UNIT
0770	C	027		03		07	
0771	C	027		02		07	
0772	C	027		03		07	
0773	C	027		04		05	
0774	C	027		05		04	
0775	C	028		03		05	
0776	C	028		04		05	
0777	C	028		05		04	
0778	C	028		06		04	
0779	C	028		08		02	
0780	C	028		09		02	
0781	C	029		03		07	
0782	C	029		04		05	
0783	C	029		05		04	
0784	C	030		03B		05	
0785	C	030		04		04	
0786	C	031		02		07	
0787	C	031		03		07	
0788	C	031		04	150	09	[illegible]
0789	C	031		05	222	04	
0790	C	031		06		05	[illegible]
0791	C	031		07		03	
0792	C	031		08		04	
0793	C	031		09	150	09	
0794	C	031		10		03	[illegible]
0795	C	031		11		02	08
0796	C	031		12	150	09	11
0797	C	031		14		02	08
0798	C	032		02		07	09
0799	C	032		03		07	09
0800	C	032		04		04	15
0801	C	032		05		04	15
0802	C	032		06		02	08
0803	C	032		07		04	15
0804	C	032		08		02	08
0805	C	032		09	197	01	05
0806	C	032		10	197	01	05
0807	C	032		11	197	01	05
0808	C	033		02		07	09
0809	C	033		03		07	09
0810	C	033		04		05	09
0811	C	033		05		04	15
0812	C	033		05		04	15
0813	C	034		04	150	09	11
0814	C	034		05		04	15
0815	C	034		06		15	09
0816	C	034		07		04	15
0817	C	034		08		04	15
0818	C	034		09	154	02	08
0819	C	034			154	01	05
0820	C	035		02		07	09
0821	C	035		04		05	09
0822	C	035		05		04	15
0823	C	036		02		06	11
0824	C	036		02		06	11

Table 2, continued

CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	BLOCK ANALYTICAL UNIT	SITE ANALYTICAL UNIT
0825	C	036		03		05	09
0826	C	036		04		04	15
0827	C	036		05		04	15
0828	C	037		04a	150	09	11
0829	C	037		02		07	09
0830	C	037		03		07	09
0831	C	037		05		04	15
0832	C	037		06	150	09	11
0833	C	037		07		02	08
0834	C	037		09		02	08
0835	C	037		10	150	09	11
0836	C	037		12	200	02	08
0837	C	037		15	195B	01	05
0838	C	037		16	200B	01	05
0839	C	038		02		07	09
0840	C	038		03		07	09
0841	C	038		04		05	09
0842	C	038		05		03	13
0843	C	038		06	150	03	13
0844	C	038		07		04	15
0845	C	038		08	202	03	13
0846	C	038		09		03	13
0847	C	038		10	205A	01	05
0848	C	038		10	205B	01	05
0849	C	038		12	205A	01	05
0850	C	038		12	205B	01	05
0851	C	038		13	206	12	04
0852	C	038		14		10	08
0853	C	038		15	150	09	11
0854	C	038		17		10	08
0855	C	038		18		14	14
0856	C	039		03A		06	11
0857	C	039		04		05	09
0858	C	039		05		04	15
0859	C	039		06		02	08
0860	C	039		07		02	08
0861	C	039		08		02	08
0862	C	039		09		02	08
0863	C	040		04		05	09
0864	C	041		06A	147	01	05
0865	C	041		02		07	09
0866	C	041		03		05	09
0867	C	041		04		04	15
0868	C	041		04	146	09	11
0869	C	041		05		02	08
0870	C	041		06		02	08
0871	C	042		02		16	09
0872	C	042		03		17	13
0873	C	043		02		16	09
0874	C	043		03		17	13
0875	C	044		02		11	09
0876	C	044		03		03	13
0877	C	044		04		10	08
0878	C	044		05	126	10	08
0879	C	045		02		11	09

Table 2, continued

CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	BLOCK ANALYTICAL UNIT	SITE AN[illegible]L UNIT
0880	C	046		02		16	
0881	C	046		03		17	
0882	C	046		04	171	20	
0883	C	042		na	177	19	
0884	C	047		02		16	
0885	C	047		03		16	
0886	C	047		05	132	20	
0887	C	047		06		18	
0888	C	048		02		16	
0889	C	048		03		17	
0890	C	048		04		18	
0891	C	048		04A	157	20	
0892	C	048		05		18	
0893	C	048		05A	230	19	
0894	C	049		02		11	
0895	C	049		03		17	
0896	C	049		04		10	
0897	C	050		02		07	
0898	C	050		02		07	
0899	C	050		03	153	01	
0900	C	050		03A	153	01	
0901	C	050		04	153	01	
0902	C	050		05	153	01	
0903	C	051		02		07	
0904	C	052		03A	152	16	
0905	C	052		05A	166	18	08
0906	C	052		05B	166	18	08
0907	C	052		02		16	09
0908	C	052		03		16	09
0909	C	052		04		17	13
0910	C	052		05		17	13
0911	C	053		2A	152	16	09
0912	C	053		02		16	09
0913	C	053		03		17	13
0914	C	054		02		16	09
0915	C	054		03		16	09
0916	C	054		04	157	20	11
0917	C	055		02		11	09
0918	C	055		03		11	09
0919	C	056		05	183	19	05
0920	C	056		02		16	09
0921	C	056		03		17	13
0922	C	056		04	168	20	11
0923	C	056		06		18	08
0924	C	057		02		07	09
0925	C	057		03		05	09
0926	C	057		05		05	09
0927	C	057		06		04	15
0928	C	057		07		02	08
0929	C	057		08		02	08
0930	C	057		10		14	14
0931	C	058		03	189	19	05
0932	C	058		02		16	09
0933	C	058		05		18	08
0934	C	058		06	228	19	05

Table 2, continued

CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	BLOCK ANALYTICAL UNIT	SITE ANALYTICAL UNIT
0935	C	059		02		11	09
0936	C	059		03		11	09
0937	C	060		07		10	08
0938	C	060		02		07	09
0939	C	060		02		05	09
0940	C	060		03	191	01	05
0941	C	060		04	209	09	11
0942	C	060		05		05	09
0943	C	060		05B		11	09
0944	C	060		05B		05	09
0945	C	060		05A		05	09
0946	C	060		06	210	11	09
0947	C	060		07		10	08
0948	C	060		08	209	09	11
0949	C	060		09		02	08
0950	C	060		09A	191	01	05
0951	C	060		10		14	14
0952	C	060		10A	191	01	05
0953	C	060		11	191	01	05
0954	C	060		11A	191	01	05
0955	C	061		02		16	09
0956	C	061		03		16	09
0957	C	061		04		03	13
0958	C	061		05		03	13
0959	C	061		06		03	13
0960	C	061		07		18	08
0961	C	061		08	228	18	08
0962	C	061		09		18	08
0963	C	062		02		16	09
0964	C	062		03		16	09
0965	C	062		04		03	13
0966	C	062		05		03	13
0967	C	062		06	215B	01	05
0968	C	062		07	132	20	11
0969	C	062		08		17	13
0970	C	062		09		03	13
0971	C	062		10		18	08
0972	C	062		11		18	08
0973	C	062		12	215B	01	05
0974	C	063		02		11	09
0975	C	063		03		11	09
0976	C	063		04		03	13
0977	C	063		05	232	21	16
0978	C	063		05	232	21	16
0979	C	063		10		10	08
0980	C	063		11		10	08
0981	C	064		02		16	09
0982	C	064		03		17	13
0983	C	064		04		17	13
0984	C	064		05	132	20	11
0985	C	064		06		17	13
0986	C	064		07		18	08
0987	C	064		08		18	08
0988	C	064		09	228	18	08
0989	C	064		10		18	08

Table 2, continued

CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	BLOCK ANALYTICAL UNIT	SITE ANAL[illegible]AL UNIT
0990	C	064		11	228	18	
0991	C	064		12		18	
0992	C	065		02		16	
0993	C	065		03		16	
0994	C	065		04		17	
0995	C	065		05		18	
0996	C	065		06		18	
0997	C	066		02		16	
0998	C	066		03	243	16	
0999	C	066		04		16	
1000	C	066		05		18	
1001	D			SFC			
1002	D			SFC			
1003	D			SFC			
1004	D			UMS		02	
1005	D			SMP	084		
1006	D			SMP	115		
1007	D			SMP	115		
1008	D			SMP	115		
1009	D			SMP			
1010	D	016		SMP	231	15	06
1011	D			UMS		02	02
1012	D			UMS		02	02
1013	D			UMS		02	02
1014	D			UMS		02	02
1015	D			UMS		02	02
1016	D			UMS		02	02
1017	D			UMS		02	02
1018	D			UMS		02	02
1019	D			UMS		02	02
1020	D			UMS		02	02
1021	D			UMS		02	02
1022	D			UMS		02	02
1023	D			UMS		02	02
1024	D			UMS		02	02
1025	D			UMS		02	02
1026	D			UMS		02	02
1027	D			UMS		02	02
1028	D			UMS		02	02
1029	D			UMS		02	02
1030	D			UMS		02	02
1031	D			UMS		02	02
1032	D			UMS		02	02
1033	D			UMS		02	02
1034	D			UMS		02	02
1035	D			UMS		02	02
1036	D			UMS		02	02
1037	D			UMS		02	02
1038	D			UMS		02	02
1039	D			UMS		02	02
1040	D			UMS		02	02
1041	D			UMS		02	02
1042	D			UMS		02	02
1043	D			UMS		02	02
1044	D			UMS		02	02

Table 2, continued

CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	BLOCK ANALYTICAL UNIT	SITE ANALYTICAL UNIT
1045	D			UMS		02	02
1046	D			UMS		02	02
1047	D			UMS		02	02
1048	D			UMS		02	02
1049	D			UMS		02	02
1050	D			UMS		02	02
1051	D			UMS		02	02
1052	D			UMS	058		02
1053	D	001	II	01	090	04	04
1054	D	001	III	01	090	05	09
1055	D	001	IV	01	090	06	07
1056	D	002	II	01	065	05	09
1057	D	002	III	01	065	07	13
1058	D	002	IV	01	065	08	10
1059	D	002	IV	02	065	09	08
1060	D	003	I	01	122	05	09
1061	D	003	I	02	122	07	13
1062	D	003	I	03	122	08	10
1063	D	003	I	04	122	08	10
1064	D	003	I	05	122	09	08
1065	D	004	II	02	089	12	12
1066	D	004	III	01	089	05	09
1067	D	004	IV	01	089	05	09
1068	D	004	IV	02	089	07	13
1069	D	004	V	01	089	08	10
1070	D	004	V	02	089	08	10
1071	D	004	VI	01	089	08	10
1072	D	004	VI	01	089	08	10
1073	D	005	I	01	115	12	12
1074	D	005	II	01	115	05	09
1075	D	005	III	01	115	08	10
1076	D	005	III	02	115	08	10
1077	D	005	V	01	115	09	08
1078	D	006	II	01	084	12	12
1079	D	006	III	01	084	05	09
1080	D	006	IV	01	084	07	13
1081	D	006	IV	01A	142	05	09
1082	D	006	V	01	084	08	10
1083	D	006	V	01	084	08	10
1084	D	006	VI	01	084	09	08
1085	D	006	VI	02	084	09	08
1086	D	007	II	01		12	12
1087	D	007	III	02		05	09
1088	D	007	IV	02	135	07	13
1089	D	007	IV	01	135	07	13
1090	D	008	I	01		05	09
1091	D	008	II	01		07	13
1092	D	008	III	01		08	10
1093	D	009	I	01	085	05	09
1094	D	009	II	01	085	07	13
1095	D	009	III	01	085	08	10
1096	D	009	IV	01		10	08
1097	D	009	V	01		10	08
1098	D	009	V	02		10	08
1099	D	010	I	01		04	04

Table 2, continued

CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	BLOCK ANALYTICAL UNIT	SITE ANALYTICAL UNIT
1100	D	010	II	01		05	
1101	D	010	IV	01		08	
1102	D	012	I	01		05	
1103	D	012	I	02		05	
1104	D	012		03	241	07	
1105	D	012		05		09	
1106	D	013	I	01		05	
1107	D	013		02		07	
1108	D	013		03		08	[illegible]
1109	D	013		04		14	[illegible]
1110	D	014		02		05	
1111	D	014		03		07	
1112	D	014		04		07	
1113	D	014		05		08	[illegible]
1114	D	014		06		14	[illegible]
1115	D	015		02		08	[illegible]
1116	D	015		03		08	[illegible]
1117	D	015		04		09	08
1118	D	015		05		09	08
1119	D	015		06		09	08
1120	D	016		02	231	12	12
1121	D	016		03	231	05	09
1122	D	016		04	231	07	13
1123	D	016		05	231	08	10
1124	D	016		06		09	08
1125	D	017		02		05	09
1126	D	017		05		08	10
1127	D	017		06		10	08
1128	D	017		08		10	08
1129	D	018				03	03
1130	D	018		02		05	09
1131	D	018		03		07	13
1132	D	018		04		08	10
1133	D	018		05		08	10
1134	D	018		06		10	08
1135	D	018		07		10	08
1136	D	018		08		09	08
1137	D	019				03	03
1138	D	019		02		04	04
1139	D	019		03		05	09
1140	D	019		05		08	10
1141	D	019		06		10	08
1142	D	019		07		10	08
1143	D	019		08		10	08
1144	D	020		02		05	09
1145	D	020		03		07	13
1146	D	020		04		08	10
1147	D	020		05		10	08
1148	D	021				03	03
1149	D	021		02		05	09
1150	D	021		03		07	13
1151	D	021		04		08	10
1152	D	021		05		08	10
1153	D	021		03A	240B	05	09
1154	D	022		02		05	09

Table 2, continued

CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	BLOCK ANALYTICAL UNIT	SITE ANALYTICAL UNIT
1155	D	022		03		08	10
1156	D	022		04		08	10
1157	D	023		02		12	12
1158	D	023		03		05	09
1159	D	023		04		07	13
1160	D	023		05		08	10
1161	D	023		06		10	08
1162	D	024		02		05	09
1163	D	024		03		07	13
1164	D	024		04	247	05	09
1165	D	024		05		07	13
1166	D	024		06		08	10
1167	D	024		07		09	10
1168	D	025		02		05	09
1169	D	025		03			16
1170	D	025		04			16
1171	D	026				03	03
1172	D	026		02		05	09
1173	D	026		03			16
1174	D	026		04			16
1175	D	026		05			16
1176	D	026		06			16
1177	D	026		07			16
1178	D	027			250	16	05
1179	D	027			249	16	05
1180	D	027		02		05	09
1181	D	027		03		08	10
1182	D	027		04		09	08
1183	D	027		05		09	08
1184	D	028		05B	241	08	10
1185	D	028		05A	241	08	10
1186	D	028		02		05	09
1187	D	028		04		08	10
1188	D	028		05D	242	08	10
1189	D	028		05C	242	08	10
1190	D	028		05F	245	08	10
1191	D	028		05E	245	08	10
1192	D	028		06		13	17
1193	D	028		07		09	08
1194	D	028		08		09	08
1195	D	029		02		05	09
1196	D	029		03		07	13
1197	D	029		04		08	10
1198	D	029		05		08	10
1199	D	030		02		05	09
1200	D	030		03		05	09
1201	D	030		04		07	13
1202	D	030		05		08	10
1203	D	030		06		10	08
1204	D	031		02		05	09
1205	D	031		03		05	09
1206	D	031		04		10	08
1207	D	031		05		10	08
1208	D	031		06		14	14
1209	D	032			252	16	05

Table 2, continued

CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	BLOCK ANALYTICAL UNIT	SITE ANALYTICAL UNIT
1210	D	032		02		05	09
1211	D	032		03		08	10
1212	D	032		04	248	09	08
1213	D	032		05		09	08
1214	D	032		06		03	03
1215	D	033		02		05	09
1216	D	033		03		08	10
1217	D	033		04		09	08
1218	D	033		05		09	08
1219	D	033		05	248	16	05
1220	D	033		05	255	16	05
1221	D	033		05	254	16	05
1222	D	033		05	254	16	05
1223	E			SFC		02	02
1224	E			UMS		02	02
1225	E			SMP	029	06	07
1226	E			SMP	030	06	07
1227	E			SMP	033	05	05
1228	E			SMP	033	05	05
1229	E			SMP	099	06	07
1230	E			UMS		02	02
1231	E			UMS		02	02
1232	E		II	01		02	02
1233	E	001	I	01	048	11	12
1234	E	001	II	01	048	09	09
1235	E	001	II	02	048	09	09
1236	E	001			048	05	05
1237	E	001	III	01	048	09	09
1238	E	001	IV	01	048	09	09
1239	E	001	V	01	048	09	09
1240	E	001	VI	01	048	09	09
1241	E	001	VIII	01	048	13	08
1242	E	001	IX	01	048	13	08
1243	E	001	X	01	048	15	10
1244	E	001	X	02	048	15	10
1245	E	001	X	03	048	15	10
1246	E	001	XII	01	048	08	08
1247	E	002	I	01		04	04
1248	E	002	II	01		11	12
1249	E	002	III			09	09
1250	E	003	I	01	028	04	04
1251	E	003	II	01	028	11	12
1252	E	003	III	01	028	09	09
1253	E	003	IV	01	028	09	09
1254	E	003	IV	02	028	09	09
1255	E	003	IV	03	028	09	09
1256	E	003	V	01	028	09	09
1257	E	003	V	02	028	09	09
1258	E	004	I	01		04	04
1259	E	004	II	01	029	11	12
1260	E	004	III	01	029	09	09
1261	E	004	III	02	071	09	09
1262	E	004	IV	01	028	09	09
1263	E	004	IV	02	028	09	09
1264	E	004	IV	03	028	09	09

Table 2, continued

CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	BLOCK ANALYTICAL UNIT	SITE ANALYTICAL UNIT
1265	E	004	IV	04	028	09	09
1266	E	005	I	01	030	11	12
1267	E	005	I	02	030	11	12
1268	E	005	II	01	030	11	12
1270	E	005	III	01	030	09	09
1271	E	005	III	01	030	09	09
1272	E	005	III	02	030	09	09
1273	E	006	I	01		04	04
1274	E	006	II	01	051	11	12
1275	E	006	III	01	051	09	09
1276	E	007	II	01	066	11	12
1277	E	007	III	01	066	16	09
1278	E	007	IV	01	066	16	09
1279	E	007	V/VI	01	066	06	07
1280	E	008	II	01	036	11	12
1281	E	008	III	01	036	09	09
1282	E	008	IV	01	036	09	09
1283	E	008	V	01	070	09	09
1284	E	008	VI	01	070	09	09
1285	E	008	VIII	01	036	17	18
1286	E	008	X	01	036	10	08
1287	E	008	XII	01	036	10	08
1288	E	009	I	01		04	04
1289	E	009	II	01	035	11	12
1290	E	009	III	01	035	09	09
1291	E	009	IV	01	070	09	09
1292	E	009	V	01	070	09	09
1293	E	009	VI	01	035	09	09
1294	E	009	VI	02	035	09	09
1295	E	010	II	01	034	11	12
1296	E	010	III	01	034	09	09
1297	E	010	III	02	070	09	09
1298	E	010	IV	01	035	09	09
1299	E	010	IV	02	035	06	07
1300	E	013	II	01	027	11	12
1301	E	013	III	01	027	09	09
1302	E	014	II	01	026	09	09
1303	E	014	II	02	026	09	09
1304	E	014	III	01	026	07	13
1305	E	014	IV	01	026	15	08
1306	E	014	V	01		15	08
1307	E	014			079	09	09
1308	E	015	I	01		04	04
1309	E	015	III	01	038	09	09
1310	E	015	IV	01	038	07	13
1311	E	015	V	01	038	15	08
1312	E	015			094	15	08
1313	E	016	II	01		11	12
1314	E	016	III	01		09	09
1315	E	016	III	02		09	09
1316	E	016	IV			07	13
1317	E	017	I			04	04
1318	E	017	II	01	031	11	12
1319	E	017	II	01	031	11	12
1320	E	017	III	01	031	09	09

Table 2, continued

CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	BLOCK ANALYTICAL UNIT	SITE ANALYTICAL UNIT
1321	E	017	III	02	031	09	[illegible]
1322	E	017	IV	01	031	09	[illegible]
1323	E	017	IV	02	031	09	[illegible]
1324	E	018	II	01	045	11	[illegible]
1325	E	021	II	01	040	11	[illegible]
1326	E	021	III	01	040	09	[illegible]
1327	E	021	IV	01	040	09	[illegible]
1328	E	021	IV	02		07	[illegible]
1329	E	023	I	01		04	04
1330	E	023	II	01	037	11	12
1331	E	023	III	01	037	09	09
1332	E	023	III	02	037	09	09
1333	E	023	III	03	095	14	07
1334	E	023	IV	01		07	13
1335	E	023	V	01	095	14	07
1336	E	024	II	01	037	11	12
1337	E	024	III	01	037	09	09
1338	E	024	III	02	037	09	09
1339	E	024	V	01	037	14	07
1340	E	024	VII	01	037	10	08
1341	E	024	VIII	01	037	10	08
1342	E	024	IX	01	037	10	08
1343	E	027A	II	01	96-100	11	12
1344	E	027A	III	01	96-100	09	09
1345	E	027A		SMP	100	18	06
1346	E	027B	I	01	96-100	11	12
1347	E	027B	III	01	119	09	09
1348	E	027C	II	01	96-100	11	12
1349	E	027C	III	01	96-100	09	09
1350	E	027D	IV	01	96-100	07	13
1351	E	027D	V	01	96-100	15	10
1352	E	027D	VI	01	96-100	10	08
1353	E	028	III	02	098	09	09
1354	E	029	II	01		11	12
1355	E	029	III	01		09	09
1356	E	030	II	01		09	09
1357	E	030	III	01		07	13
1358	E	030	III	02		07	13
1359	E	030	IV	01		15	08
1360	E	031	II	01		09	09
1361	E	031	III	01		07	13
1362	E	031	III	02		07	13
1363	E	031	IV	01		15	08
1364	E	031	V	01		15	08
1365	E	032	I/II	01	104	11	12
1366	E	032	III	01	104	09	09
1367	E	032	IV	01	104	07	13
1368	E	032	IV	02	104	07	13
1369	E	032	V	01	104	15	08
1370	E	032	V	02	104	08	08
1371	E	033	II	01	107	11	12
1372	E	033	III	01	107	09	09
1373	E	033	IV	01	107	07	13
1374	E	034	I	01		11	12
1375	E	034	I	02		11	12

Table 2, continued

CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	BLOCK ANALYTICAL UNIT	SITE ANALYTICAL UNIT
1376	E	034	II	01		09	09
1377	E	034	III	01		07	13
1378	E	035	II	01	106	11	12
1379	E	036	I	01		11	12
1380	E	036	II	01		09	09
1381	E	036	III	01		07	13
1382	E	036	IV	01		15	08
1383	E	036	IV	02		15	08
1384	E	041	II	01	112	11	12
1385	E	041	III	01		09	09
1386	E	042	II	01		11	12
1387	E	043	I	01		04	04
1388	E	043	II	01		11	12
1389	E	043	II	02		09	09
1390	E	043	III	01		07	13
1391	E	043	IV	01		15	08
1392	E	044	II	02		09	09
1393	E	045	III	02		09	09
1394	E	046	III	01		09	09
1395	E	047		SFC	194		16
1396	E	047		01	194		16
1397	E	047		02	194		16
1398	E	047		03	194		16
1399	E	047		04	194		16
1400	E	047		05	194		16
1401	E	047		06	194		16
1402	E	047		07	194		16
1403	E	047		08	194		16
1404	E	047		09	194		16
1405	E	047		10	194		16
1406	E	047		11	194		16
1407	E	047		12	194		16
1408	E	047		14	194		16
1409	E	047		14	194		16
1410	E	047		14	194		16
1411	E	048		02		11	12
1412	E	048		03		09	09
1413	E	048		04		09	09
1414	E	048		05		07	13
1415	E	048		06		07	13
1416	E	048		07	256	15	08
1417	E	048		08		15	08
1418	E	048		09		04	04
1419	E	049		02		11	12
1420	E	049		03		09	09
1421	E	049		04		09	09
1422	E	049		05		09	09
1423	E	049		06		07	13
1424	E	049		07		15	08
1425	E	050		03		09	09
1426	E	050		04		07	13
1427	E	050		05		07	13
1428	E	050		06		15	08
1429	E	050		07		15	08
1430	E	051		02		11	12

Table 2, continued

CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	BLOCK ANALYTICAL UNIT	SITE ANA[illegible] UNIT
1431	E	051		03		09	[illegible]
1432	E	051		04		07	[illegible]
1433	E	051		06		15	[illegible]
1434	E	052		02		11	[illegible]
1435	E	052		03		09	[illegible]
1436	E	052		04		03	[illegible]
1437	E	052		05		03	[illegible]
1438	E	053		02		09	[illegible]
1439	E	053		03		07	[illegible]
1440	E	053		04		15	[illegible]
1441	E	053		05		15	[illegible]
1442	E	053		06		15	[illegible]
1443	E	054		01-04		03	[illegible]
1444	E	054		02		11	[illegible]
1445	E	054		03		09	[illegible]
1446	E	054		04		09	[illegible]
1447	E	054		05		07	[illegible]
1448	E	055		02		09	09
1449	E	055		03		07	13
1450	E	055		04		07	13
1451	E	055		05		07	13
1452	E	055		06		07	13
1453	E	055		07	253	15	08
1454	E	055		08	253	15	08
1455	E	055		09	253	15	08
1456	E	056		02		11	12
1457	E	056		03		09	09
1458	E	056		04		09	09
1459	E	056		05		09	09
1460	E	056		06		07	13
1461	E	056		07		15	08
1462	E	058		03		11	12
1463	E	058		04		09	09
1464	E	058		05		07	13
1465	E	058		06		15	08
1466	E	058		08		15	08
1467	E	058		10	251	15	08
1468	E	058		12	251	15	08
1469	E	059		01-05		03	03
1470	E	059		02		09	09
1471	E	059		03		09	09
1472	E	059		04		15	08
1473	E	059		05		15	08
1474	E	060		02		09	09
1475	E	060		03		07	13
1476	E	060		04		15	08
1477	E	060		05		15	08
1478	F				043		16
1479	F		I	01	052A		16
1480	F		III	01	052A		16
1481	F		II	01	053		16
1482	F		III	01	053		16
1483	F	001					16
1484	F	001		01	043		16
1485	F	001		02	043		16

Table 2, continued

CAT #	BLOCK	UNIT	STRATUM	LEVEL	FEATURE	BLOCK ANALYTICAL UNIT	SITE ANALYTICAL UNIT
1486	F	001		03	043		16
1487	F	002		01			16
1488	F	002		03			16
1489	F	002		04			16
1490	F	002		05	143		16
1491	F	002		06	043		16
1492	F	003		01			16
1493	F	004		01	043		16
1494	F	004		02	043		16
1495	F	004		03	043		16
1496	F	004		04	043		16
1497	F	004		06	043		16
1498	F	004		09	043		16
1499	F	005	I	01			16
1500	F	005	II	01			16
1501	F	005	III	02	130		16
1502	F	006	II	01			16
1503	F	006	III	01			16
1504	F	006	IV	01			16
1505	F	007	I	01			16
1506	F	007	II	01			16
1507	F	008	I	01			16
1508	F	009	I	01			16
1509	F	010	IV	01			16
1510	F	011		01	043		16
1511	F	011		02	043		16
1512	F	011		03	043		16
1513	F	011		04	043		16
1514	F	011		05	043		16
1515	F	011		06	043		16
1516	F	011		07	043		16
1517	F	012	II	01			16
1518	F	013	II	01			16
1519	I			02			16
1520	I			04			16
1521	I		IV	02			16
1522	I			02			16
1523	I			02			16
1524	I			03			16
1525	I			03			16
1526	J		VIII	TR			16
1527	C	037		04		05	09
1528	SFC			SFC			01
1529	C	007		SFC			03

Table 3. List of Units from Site 16PC62.

UNIT	NORTH	EAST	UNIT SIZE	LEVELS	FEATURES	COMMENTS
Block C						
C1	160	140	2 X 2 M	1		Unit encompassed structural features eroding from the cutbank
C2	158	140	2 X 2 M	2	1, 6	Unit encompassed structural features eroding from the cutbank
C3	160	138	2 X 2 M	1	2	Unit was placed to expose feature eroding from the cutbank
C4	180	134	1 X 1 M	7	-0-	Unit was placed to delineate area of Structure 1
C5	168	134	1 X 1 M	4	-0-	Midden test
C6	180	133	1 X 1 M	19	116, 199, 200, 204,218, 226	Unit was placed to delineate area of Structure 1; includes portions of brick chimney foundation and post supports for earlier chimney
C7	179	134	1 X 1 M	17	150, 151, 201, 207	Unit was placed to delineate area of Structure 1; includes portions of the south kitchen wall
C8	161	134	1 X 1 M	5	126	Unit placed to investigate apparent drainage ditch in the southern portion of the block
C9	180	132	1 X 1 M	6	116	Unit was placed to delineate area of Structure 1; includes portions of the brick chimney foundation
C10	166	130	1 X 1 M	2	-0-	Midden test
C11	179	117.5	1 X 2 M	7	14	Unit placed to investigate levee/berm feature
C12	178	134	1 X 1 M	4	149, 151, 167, 202	Unit placed to investigate Structure 1
C13	181	132	1 X 1 M	29	116, 197,224,229	Unit was placed to delineate area of Structure 1; includes portions of brick chimney foundation and post supports for earlier chimney
C14	164	119	1 X 1 M	2	-0-	Midden test
C15	177	129	1 X 1 M	7	124, 150, 216, 218	Unit placed to investigate Structure 1; incorporates southwest corner of structure
C16	182	129	1 X 1 M	3	125	Unit placed to investigate Structure 1
C17	179	136	1 X 1 M	7	131	Unit placed to investigate Structure 1
C18	174	117	1 X 1 M	3	128	Unit placed to investigate Structure 1
C19	170	136	1 X 2 M	6	132 - 134	Unit placed to investigate Structure 2
C20	186	126	1 X 1 M	3	-0-	Midden sample
C21	179	126	1 X 1 M	1	-0-	Midden sample
C22	180	128	1 X 1 M	1	-0-	Unit discontinued because of presence of Phase II Trench #8
C23	181	128	1 X 1 M	6	-0-	Unit placed to investigate Structure 1
C24	163	133	1 X 1 M	6	126	Unit placed to investigate apparent drainage ditch in the southern portion of the block
C25	177	130	1 X 1 M	3	150	Unit placed to investigate Structure 1
C26	177	131	1 X 1 M	3	196	Unit placed to investigate Structure 1
C27	182	131	1 X 1 M	5	116	Unit placed to investigate Structure 1
C28	181	131	1 X 1 M	10	-0-	Unit placed to investigate Structure 1
C29	180	131	1 X 1 M	5	-0-	Unit placed to investigate Structure 1
C30	179	131	1 X 1 M	4	159	Unit placed to investigate Structure 1
C31	178	131	1 X 1 M	14	150, 159, 220, 221, 222	Unit placed to investigate Structure 1
C32	182	132	1 X 1 M	11	116, 197, 224	Unit was placed to delineate area of Structure 1; includes portions of brick chimney foundation and post supports for earlier chimney
C33	179	132	1 X 1 M	5	-0-	Unit placed to investigate Structure 1
C34	178	132	1 X 1 M	9	150, 154	Unit placed to investigate Structure 1
C35	182	133	1 X 1 M	5	-0-	Unit placed to investigate Structure 1
C36	181	133	1 X 1 M	8	116, 198	Unit placed to investigate Structure 1
C37	179	133	1 X 1 M	17	150, 195, 200, 208	Unit placed to investigate Structure 1
C38	178	133	1 X 1 M	18	150, 202, 205, 206	Unit placed to investigate Structure 1
C39	182	134	1 X 1 M	10	-0-	Unit placed to investigate Structure 1
C40	181	134	1 X 1 M	4	-0-	Unit placed to investigate Structure 1
C41	181	127	1 X 1 M	6	146, 147	Unit placed to investigate Structure 1; incorporates the northwestern corner of the structure
C42	169	130	1 X 1 M	3	168, 169, 170	Unit placed to investigate Structure 2
C43	169	131	1 X 1 M	3	148	Unit placed to investigate Structure 2
C44	162	133.5	1 X 1 M	5	126	Unit placed to investigate apparent drainage ditch in the southern portion of the block
C45	171	130	1 X 1 M	4	-0-	Unit placed to investigate Structure 2
C46	168	130	1 X 1 M	4	171	Unit placed to investigate Structure 2

Table 3, continued

UNIT	NORTH	EAST	UNIT SIZE	LEVELS	FEATURES	COMMENTS
C47	169	137	1 X 1 M		132	Unit placed to investigate Structure 2
C48	170	132	1 X 1 M	5	157, 230	Unit placed to investigate Structure 2
C49	171	132	1 X 1 M	4	157	Unit placed to investigate Structure 2
C50	179	128	1 X 1 M	3	153	Unit placed to investigate Structure 2
C51	178	129	1 X 1 M	2	159, 160, 163, 164, 165	Unit placed to investigate Structure 1; incorporates stains from floor planks
C52	166	132	1 X 1 M	5	152, 166	Unit placed to investigate interior of Structure 2; incorporates small firepit
C53	167	132	1 X 1 M	3	152	Unit placed to investigate interior of Structure 2; incorporates small firepit
C54	170	130	1 X 1 M	3	157	Unit placed to investigate Structure 2
C55	169	128	1 X 1 M	3	-0-	Unit placed to investigate Structure 2
C56	165	132	1 X 1 M	6	168, 181 - 185	Unit placed to investigate Structure 2; incorporates remains of an earthfast wall
C57	178	130	1 X 1 M	10	150, 159, 163, 164, 165, 217	Unit placed to investigate Structure 1; incorporates stains from floor planks
C58	164	132	1 X 1 M	6	168, 181 - 190	Unit placed to investigate Structure 2; incorporates remains of an earthfast wall
C59	169	129	1 X 1 M	3	168, 228	Unit placed to investigate Structure 2; incorporates remains of an earthfast wall
C60	183	131	1 X 1 M	11	191, 209	Unit placed to investigate Structure 1
C61	165	137	1 X 1 M	9	228	Unit placed to investigate Structure 2
C62	165	138	1 X 1 M	12	132, 215, 227	Unit placed to investigate Structure 2; incorporates the probable southeast corner
C63	175	134	1 X 1 M	13	232 - 236	Unit placed to investigate area between structures
C64	166	134	1 X 1 M	13	132, 228, 246	Unit placed to investigate Structure 2
C65	164	133	1 X 1 M	6	126, 228	Unit placed to investigate Structure 2
C66	166	134	1 X 1 M	6	-0-	Unit placed to investigate the interior of Structure 2
Block D						
D1	215.5	106	1.5 X 2 M	5	90	Unit placed to investigate feature
D2	204	129.5	1.5 X 1.5 M	5	65	Unit placed to investigate brick pier
D3	214	131	1 X 2 M	5	122	Unit placed to investigate brick pier
D4	214.5	113.5	1.5 X 1.5 M	8	89	Unit placed to investigate brick pier; pier is southwest corner of the core of the main house
D5	218	123	1 X 2.5 M	5	115	Unit placed to investigate brick pier; pier if the connection between the core and the south wing of the main house
D6	209.5	128.5	1.5 X 1.5 M	7	84	Unit placed to investigate brick chimney foundation in south wing of the main house
D7	212.5	114	3 X 3 M	7	135 - 141	Pier placed to investigate cistern of the main house
D8	202	134	1 X 1 M	3	-0-	Midden sample
D9	213	126	1 X 1 M	6	85	Unit placed to investigate brick pier in south wing of main house
D10	198	128	1 X 1 M	4	-0-	Midden sample
D11	206.5	137	1 X 2 M	2	-0-	Midden sample
D12	216	110	1 X 1 M	6	-0-	Midden sample
D13	213.5	109	1 X 1 M	4	-0-	Midden sample
D14	212	121	1 X 1 M	9	-0-	Midden sample
D15	214	132	1 X 1 M	6	-0-	Midden sample
D16	216	128	1 X 1 M	7	231	Unit placed to investigate brick pier in south wing of main house
D17	210	133	1 X 1 M	8	-0-	Unit placed to investigate interior of south wing
D18	210	126	1 X 1 M	8	-0-	Unit placed to investigate exterior of south wing
D19	210	122	1 X 1 M	9	-0-	Unit placed to investigate exterior of south wing
D20	210	122	1 X 1 M	5	-0-	Unit placed to investigate area outside of core of main house
D21	214	124	1 X 1 M	7	-0-	Unit placed to investigate exterior of south wing
D22	206	131	1 X 1 M	6	-0-	Unit placed to investigate interior of south wing
D23	203	132	1 X 1 M	7	-0-	Unit placed to investigate exterior of south wing
D24	205	136	1 X 1 M	8	247	Unit placed to investigate exterior of south wing
D25	212	133	1 X 1 M	7	-0-	Unit placed to investigate interior of south wing
D26	215	126	1 X 1 M	7	-0-	Midden sample

Table 3, continued

UNIT	NORTH	EAST	UNIT SIZE	LEVELS	FEATURES	COMMENTS
D27	216	122	1 X 1 M	5	248 - 250	Unit placed to investigate exterior of core of the main house
D28	217	117	1 X 1 M	9	241, 242, 244, 245	Unit placed to investigate interior of the core of the main house
D29	217	114	1 X 1 M	6	-0-	Unit placed to investigate interior of the core of the main house
D30	212	111	1 X 1 M	7	-0-	Midden sample
D31	209	131	1 X 1 M	7	-0-	Unit placed to investigate interior of the south wing
D32	217	122	1 X 1 M	6	248, 252	Unit placed to investigate features on the exterior of the core of the main house
D33	215	122.5	1 X 1 M	5	248, 254, 255	Unit placed to investigate features on the exterior of the core of the main house
Block E						
E1	224	114	1 X 2 M	16	48	Unit placed to investigate brick pier from the core of the main house
E2	224	123	1 X 2 M	2	-0-	Unit placed to investigate brick concentration
E3	232	118.5	1 X 2.5 M	9	28, 71, 8	Unit placed to investigate brick pier from north wing of the main house
E4	234	118	1 X 2 M	8	29	Unit placed to investigate brick pier from north wing of the main house
E5	236.5	116	1 X 2 M	6	30	Unit placed to investigate brick pier from north wing of the main house
E6	241	115	1 X 2 M	4	51	Unit placed to investigate brick pier from north wing of the main house
E7	239	118	2 X 2 M	6	66	Unit placed to investigate remains of chimney foundation in the north wing of the main house
E8	239	120.5	2 X 2 M	13	36, 78, 7	Unit placed to investigate brick piers from north wing of the main house
E9	236	123	1 X 2 M	7	35, 70	Unit placed to investigate brick pier from north wing of the main house
E10	234	123.5	1 X 2 M	6	34	Unit placed to investigate brick pier from north wing of the main house
E11	231	124.5	1.5 X 2 M	-0-	-0-	Not excavated
E12	230	121.5	1.5 X 2 M	1	32	Unit placed to investigate brick pier from north wing of the main house
E13	229	119	1.5 X 2 M	6	27	Unit placed to investigate brick pier from north wing of the main house; this is a connection between the core and the north wing of the main house
E14	228	116	1.5 X 2 M	6	26, 79	Unit placed to investigate brick pier from the core of the main house
E15	227	113.5	1 X 2 M	6	38, 94	Unit placed to investigate brick pier from the core of the main house
E16	238	113.5	1 X 2 M	5	-0-	Unit placed to investigate a brick concentration
E17	238.5	115.5	1 X 2 M	6	31, 71	Unit placed to investigate a brick pier from north wing of the main house
E18	243	120	1.5 X 2 M	2	45	Unit placed to investigate a brick pier from north wing of the main house
E19	245	117.5	1 X 2 M	1	-0-	Unit placed to investigate a possible pier
E20	239.5	127.5	1 X 1 M	-0-	-0-	Not excavated
E21	234.5	126	1 X 2 M	5	40	Unit placed to investigate a brick pier from north wing of the main house
E22	226.5	119.5	1 X 1 M	8	37	Unit was placed to investigate brick pier associated with core of the main house
E23	226.5	120.5	1 X 1 M	8	37, 93	Unit was placed to investigate brick pier associated with core of the main house
E24	225.5	119.5	1 X 1 M	11	37	Unit was placed to investigate brick pier associated with core of the main house
E25	225.5	120.5	1 X 1 M	8	37	Unit was placed to investigate brick pier associated with core of the main house
E26	228	125.5	2 X 2 M	2	91	Unit was placed to investigate brick pier from the core of the main house
E27	225.5	109	2 X 2 M	8	96, 99, 100, 101, 117 - 119	Unit placed to investigate northern cistern and brick pier from the core of the main house
E28	222	110	1 X 2 M	4	98	Unit was placed to investigate brick pier from the core of the main house
E29	225	103	1 X 1 M	4	-0-	Midden test
E30	229	104	1 X 1 M	6	-0-	Midden test
E31	232	104	1 X 1 M	6	-0-	Midden test
E32	221.5	130.5	1 X 2 M	7	104	Unit placed to investigate northeastern corner brick pier from the core of the main house
E33	231.5	127.5	1 X 2 M	4	107	Unit placed to investigate a brick pier from north wing of the main house
E34	236	131	1 X 1 M	4	-0-	Midden test
E35	229.5	128.5	1 X 2 M	2	106	Unit was placed to investigate brick pier from the core of the main house
E36	235	120.5	1 X 1 M	6	-0-	Midden test
E41	226	122.5	1 X 2 M	3	112	Unit placed to investigate brick pier at the northeast corner of the north wing of the main house
E42	243	114.5	1 X 2 M	2	120	Unit placed to investigate brick pier in the north wing of the main house

Table 3, continued

UNIT	NORTH	EAST	UNIT SIZE	LEVELS	FEATURES	COMMENTS
E43	242	104	1 X 1 M	5	-0-	Midden test
E44	233	107	1 X 1 M	2	-0-	Midden test
E45	232	111	1 X 1 M	1	-0-	Midden test
E46	223	106	1 X 1 M	1	-0-	Midden test
E47	226	147	2 X 2 M	14	194	Unit was placed to investigate wooden well shaft on beach
E48	222	118	1 X 1 M	9	256	Unit placed to investigate the interior of the core of the main house
E49	224	122	1 X 1 M	8	-0-	Unit placed to investigate the exterior of the core of the main house
E50	228	122	1 X 1 M	7	-0-	Unit placed to investigate the interior of the core of the main house
E51	226	125	1 X 1 M	7	-0-	Unit placed to investigate the interior of the core of the main house
E52	226	133	1 X 1 M	5	-0-	Midden test
E53	225	113	1 X 1 M	6	-0-	Unit placed to investigate the area near the north cistern
E54	230	114	1 X 1 M	6	-0-	Unit placed to investigate the exterior of the core of the main house
E55	233	113	1 X 1 M	9	253	Unit placed to investigate the interior of the core of the main house
E56	230	110	1 X 1 M	8	-0-	Unit placed to investigate the area near the north cistern
E58	266	117	1 X 1 M	13	251	Unit placed to investigate the interior of the core of the main house
E59	223	108	1 X 1 M	7	-0-	Unit placed to investigate the exterior of the core of the main house
E60	226	106	1 X 1 M	6	-0-	Unit placed to investigate the exterior of the core of the main house
Block F						
F1	266	133	2 X 2 M	4	43	Unit placed to investigate trash pit eroding from the cutbank
F2	268	133	2 X 2 M	3	43	Unit placed to investigate trash pit eroding from the cutbank
F3	265	133	1 X 2 M	1	-0-	Unit placed to investigate trash pit eroding from the cutbank; closed due to high water
F4	266	135	1 X 2 M	10	43	Unit placed to investigate trash pit eroding from the cutbank
F5	259	120	1 X 2 M	6	130	Unit placed to investigate brick concentration
F6	268	131.5	1 X 2 M	4	-0-	Unit placed to investigate trash pit eroding from the cutbank
F7	260	126	1 X 1 M	4	-0-	Midden test
F8	275	114	1 X 1 M	2	-0-	Midden test
F9	270	120	1 X 1 M	2	-0-	Midden test
F10	266	133	1 X 2 M	3	-0-	Unit placed to investigate trash pit eroding from the cutbank
F11	268	135	1 X 1 M	7	43	Unit placed to investigate trash pit eroding from the cutbank
F12	254	105	1 X 1 M	2	-0-	Midden sample
F13	264	103	1 X 1 M	2	-0-	Midden sample

Table 4. Features Identified at Site 16PC62.

FEATURE	BLOCK	PROVENIENCE	STRUCTURE	DESCRIPTION	COMMENTS
001	C	1, 2	UNIDENTIFIED OUTBUILDING	BRICK PIER	EROSION
002	C	1	UNIDENTIFIED OUTBUILDING	DITCH	EROSION
003	C	1	UNIDENTIFIED OUTBUILDING	BRICK COURSE	6 BRICKS
004	C	1	UNIDENTIFIED OUTBUILDING	LINEAR DEPRESSION	E-W
005	C	1, 2	UNIDENTIFIED OUTBUILDING	LINEAR DEPRESSION	N-S
006	C	2	UNIDENTIFIED OUTBUILDING	POSTHOLE	AT EDGE OF ERODING CUTBANK
007	C		UNIDENTIFIED	POSTHOLE	AT EDGE OF ERODING CUTBANK
008	C		UNIDENTIFIED	POSTHOLE	AT EDGE OF ERODING CUTBANK
009	C		UNIDENTIFIED	POSTHOLE	AT EDGE OF ERODING CUTBANK
010	C		UNIDENTIFIED	POSTHOLE	AT EDGE OF ERODING CUTBANK
011	C	N187E134	KITCHEN	POSTHOLE	TOP OF 2ND MIDDEN
012	C	TR 1 N186.8E133	KITCHEN	POSTHOLE	WOOD REMAINS
013	B	TR 2, 13, 14	NONE	DITCH	POSTDATES OCCUPATION
014	C, D	N160-212, E117-130	NONE	LEVEE	POSTDATES OCCUPATION
015	C	N185E130		POSSIBLE POST	DELETED
016	C	N185E130		POSSIBLE POST	DELETED
017	C	TR.4		POSSIBLE POST	DELETED
018	C, D	N160-212, E117-130	NONE	DITCH	POSTDATES OCCUPATION
019	C, D	N160-212, E117-130	NONE	DITCH	POSTDATES OCCUPATION
020	C	TR 4 N174E138	STRUCTURE 2	POST	APPEARS ONLY IN SOUTH WALL OF TRENCH
021	C	TR 4 N174E136	STRUCTURE 2	POST	APPEARS ONLY IN SOUTH WALL OF TRENCH
022	C	TR.4	STRUCTURE 2	TRENCH	SAME AS F. 133
023	C	TR.4	STRUCTURE 2	TRENCH	SAME AS F. 132
024	C	TR.4	STRUCTURE 2	POSSIBLE TRENCH	SHOWS ONLY IN S. WALL
025	C	N190E115	NONE	DEPRESSION	POSTDATES OCCUPATION
026	E	14	CORE	BRICK PIER	
027	E	13	NORTH WING AND CORE	BRICK PIER	
028	E	3	NORTH WING	BRICK PIER	
029	E	4	NORTH WING	BRICK PIER	
030	E	5	NORTH WING	BRICK PIER	
031	E	17	NORTH WING	BRICK PIER	
032	E	12	CORE	BRICK PIER	
033	E	11	CORE	BRICK PIER	
034	E	10	NORTH WING	BRICK PIER	
035	E	9	NORTH WING	BRICK PIER	
036	E	8	NORTH WING	BRICK PIER	
037	E	23, 24	CORE	BRICK PIER	
038	E	15	CORE	BRICK PIER	
039	E	16	CORE	POSSIBLE PIER	DELETED
040	E	21	NORTH WING	BRICK PIER	
041	E	N227E130	CORE	BRICK PIER	
042	C	TR 4 N172E133	STRUCTURE 2	POST	APPEARS ONLY IN SOUTH WALL OF TRENCH
043	F	1, 2, 4, 1	NONE	REFUSE PIT	SECONDARY USE AS REFUSE PIT
044	E	19		POSSIBLE PIER	DELETED
045	E	18	NORTH WING	BRICK PIER	
046	E	20		POSSIBLE PIER	DELETED
047	G	TR 5 N294.7E116.36	NONE	DITCH	POST-OCCUPATION
048	E	1	CORE	BRICK PIER	
049	D	N213.8E136.5	SOUTH WING	BRICK PIER	
050	D	N215.5E125.5	SOUTH WING	BRICK PIER	
051	E	6	NORTH WING	BRICK PIER	

Table 4, continued

FEATURE	BLOCK	PROVENIENCE	STRUCTURE	DESCRIPTION	COMMENTS
052	F	N258E100	NONE	PIT	
053	F	N275E108	NONE	PIT	
054	D	N214.2E134.8	SOUTH WING	BRICK PIER	
055	D	N212.3E135.6	SOUTH WING	BRICK PIER	
056	D	N210E136	SOUTH WING	BRICK PIER	
057	D	11	SOUTH WING	BRICK PIER	
058	D	N206.5E134.5	SOUTH WING	BRICK PIER	
059	D	N217.5E132.5	SOUTH WING	BRICK PIER	
060	D	N216.5E119	SOUTH WING	BRICK PIER	
061	D	N215.5E116.5	SOUTH WING	BRICK PIER	
062	D	N213E132,5	SOUTH WING	BRICK PIER	
063	D	N207.5E132.5	SOUTH WING	BRICK PIER	
064	E	14	CORE	SHALLOW DEPRESSIO	INSIGNIFICANT
065	D	2	SOUTH WING	BRICK PIER	SOUTHEAST CORNER
066	E	7	NORTH WING	HEARTH	H-SHAPED; ALL BRICKS ROBBED
067	F			POSSIBLE POST	DELETED
068	F			POSSIBLE POST	DELETED
069	F			STAIN	DELETED
070	E	8, 9, 10	NORTH WING	TRENCH	POSSIBLE DRAINAGE CHANNEL
071	E	3, 4, 5, 1	NORTH WING	TRENCH	POSSIBLE DRAINAGE CHANNEL
072	F			POSSIBLE POST	DELETED
073	F			POSSIBLE POST	DELETED
074	F			POSSIBLE POST	DELETED
075	F			POSSIBLE POST	DELETED
076	F			POSSIBLE POST	DELETED
077	F			POSSIBLE POST	DELETED
078	E	8	NORTH WING	BRICK PIER	
079	E	14	CORE	TRENCH	POSSIBLE DRAINAGE CHANNEL
080	E	3	NORTH WING	POSTHOLE	SHALLOW
081	F			POSSIBLE POST	DELETED
082	F			POSSIBLE POST	DELETED
083	F			POSSIBLE PIER	DELETED
084	D	6	SOUTH WING	HEARTH	H-SHAPED
085	D	9	SOUTH WING	BRICK PIER	
086	D	N209E128	SOUTH WING	BRICK PIER	
087	D	N210E128	SOUTH WING	BRICK PIER	
088	D	N206E128	SOUTH WING	BRICK PIER	
089	D	4	CORE	BRICK PIER	SOUTHWEST CORNER
090	D	1	NONE	PIT	POSSIBLE BOUSILLAGE PIT
091	E	26	NORTH WING	BRICK PIER	
092	E	14	CORE	POSTHOLE	SHALLOW
093	E	23	CORE	POSTHOLE	
094	E	15	CORE	POSTHOLE	
095	E	23	CORE	DITCH	POSSIBLE DRAINAGE CHANNEL
096	E	27	CORE	BRICK PIER	NORTHWEST CORNER
097	E	N228E124		POSSIBLE PIER	DELETED
098	E	28	CORE	BRICK PIER	
099	E	27	NORTH CISTERN	BRICK PIER	
100	E	27	NORTH CISTERN	BRICK PIER	
101	E	27	NORTH CISTERN	BRICK PIER	
102	E	29		POSSIBLE POST	DELETED
103	E	2		POSSIBLE PIER	DELETED
104	E	32	CORE	BRICK PIER	SOUTHEAST CORNER

Table 4, continued

FEATURE	BLOCK	PROVENIENCE	STRUCTURE	DESCRIPTION	COMM
105	E	N224.5E133.5	CORE	BRICK PIER	
106	E	35	CORE	BRICK PIER	
107	E	33	CORE	BRICK PIER	NORTHEAST CORI
108	E	N238E120	NORTH WING	BRICK PIER	
109	E	N239.5E125	NORTH WING	BRICK PIER	
110	E	N242E124.5	NORTH WING	BRICK PIER	
111	E	N244.5E123.5	NORTH WING	BRICK PIER	
112	E	41	NORTH WING	BRICK PIER	
113	E	N227.5E123.5	NORTH WING	POSSIBLE PIER	DELETED
114	C	7	KITCHEN	SILL IMPRESSION	SAME AS F 150
115	D	5	SOUTH WING AND CORE	BRICK PIER	CONNECTING PIEF
116	C	9, 13, 27,	KITCHEN	HEARTH	H-SHAPED BRICK F
117	E	27	NORTH CISTERN	BRICK PIER	
118	E	27	NORTH CISTERN	BRICK PIER	
119	E	27	NORTH CISTERN	DRIP LINE	FROM WATER OUT
120	E	42	NORTH WING	BRICK PIER	NORTHWEST CORI
121	D	N217.5E130.5		POSSIBLE PIER	DELETED
122	D	3	SOUTH WING	BRICK PIER	
123	D	N217.5E131.5		POSSIBLE PIER	DELETED
124	C	15	KITCHEN	POSTHOLE	SOUTHWEST CORN
125	C	16	KITCHEN	POSTHOLE	NORTH WALL
126	C	8, 24, 44,	STRUCTURE 2	DITCH	DRAINAGE DITCH
127	C	16	KITCHEN	POSTHOLE	
128	C	18	UNIDENTIFIED STRUCTURE	POSTHOLE	
129	C	18	UNIDENTIFIED STRUCTURE	LINEAR STAIN	POSSIBLE NATURAL
130	F	5	NONE	LINEAR STAIN	POSSIBLE NATURAL
131	C	17	KITCHEN	DITCH	UNIDENTIFIED, POSSIBLE SILL OR DRAINAGE
132	C	19	STRUCTURE 2	SILL IMPRESSION	
133	C	19	STRUCTURE 2	SILL IMPRESSION	
134	C	19	STRUCTURE 2	SILL IMPRESSION	
135	D	7	SOUTH CISTERN	BRICK PIER	
136	D	7	SOUTH CISTERN	BRICK PIER	
137	D	7	SOUTH CISTERN	BRICK PIER	
138	D	7	SOUTH CISTERN	BRICK PIER	
139	D	7	SOUTH CISTERN	BRICK PIER	
140	D	7	SOUTH CISTERN	BRICK PIER	
141	D	7	SOUTH CISTERN	PLANK	IN SITU UNDER DRAIN
142	D	6	SOUTH WING	DEPRESSION	ASSOCIATED WITH HEARTH (F84)
143	F	2	NONE	TRASH PIT	SECONDARY USE
144	H	TR 7 N344E108.2	NONE	POSTHOLE	NO ASSOCIATED CULTURAL MATERIAL
145	C	25		SAME AS F 150	DELETED
146	C	41	KITCHEN	SILL IMPRESSION	WEST WALL
147	C	41	KITCHEN	POSTHOLE	NORTHWEST CORNER
148	C	43	STRUCTURE 2	PLANK STAIN	
149	C	12	KITCHEN	DRIPLINE	SOUTH WALL
150	C	7, 15, 25,	KITCHEN	SILL IMPRESSION	SOUTH WALL
151	C	7, 12	KITCHEN	SILL IMPRESSION	SOUTH WALL
152	C	52	STRUCTURE 2	HEARTH	CIRCULAR FIREPIT
153	C	50	KITCHEN	POSTHOLE	WEST WALL
154	C	34	KITCHEN	POSTHOLE	SOUTH WALL
155	C	50	KITCHEN	SILL IMPRESSION	WEST WALL
156	C	50	KITCHEN	LINEAR STAIN	WEST WALL

Table 4, continued

FEATURE	BLOCK	PROVENIENCE	STRUCTURE	DESCRIPTION	COMMENTS
157	C	48, 49	STRUCTURE 2	SILL IMPRESSION	E-W
158	C	49		POSSIBLE POST	DELETED
159	C	30, 31, 51	KITCHEN	PLANK STAIN	FLOOR PLANK
160	C	51	KITCHEN	LINEAR STAIN	WEST WALL
161	C	24	STRUCTURE 2	LINEAR STAIN	ASSOCIATED WITH FEATURE 126
162	C	24	STRUCTURE 2	POSTHOLE	SHALLOW; ASSOCIATED WITH FEATURE 126
163	C	51	KITCHEN	PLANK STAIN	FLOOR PLANK
164	C	51	KITCHEN	PLANK STAIN	FLOOR PLANK
165	C	51,57	KITCHEN	PLANK STAIN	FLOOR PLANK
166	C	52	STRUCTURE 2	DEPRESSION	UNIDENTIFIED
167	C	12	KITCHEN	DEPRESSION	UNIDENTIFIED; ASSOCIATED WITH FEATURE 149
168	C	42, 56, 58	STRUCTURE 2	TRENCH	POTEAUX EN TERRE
169	C	42	STRUCTURE 2	JOIST STAIN	FLOOR
170	C	42	STRUCTURE 2	POSTHOLE	SQUARE
171	C	46	STRUCTURE 2	SILL IMPRESSION	
172	C	7		POSSIBLE POST	DELETED
173	C	42	STRUCTURE 2	POSTHOLE	POTEAUX EN TERRE; FEATURE 168
174	C	42	STRUCTURE 2	POSTHOLE	POTEAUX EN TERRE; FEATURE 168
175	C	42	STRUCTURE 2	POSTHOLE	POTEAUX EN TERRE; FEATURE 168
176	C	42	STRUCTURE 2	POSTHOLE	POTEAUX EN TERRE; FEATURE 168
177	C	42	STRUCTURE 2	POSTHOLE	POTEAUX EN TERRE; FEATURE 168
178	C	42	STRUCTURE 2	POSTHOLE	POTEAUX EN TERRE; FEATURE 168
179	C	42	STRUCTURE 2	POSTHOLE	POTEAUX EN TERRE; FEATURE 168
180	C	42	STRUCTURE 2	POSTHOLE	POTEAUX EN TERRE; FEATURE 168
181	C	56	STRUCTURE 2	POSTHOLE	POTEAUX EN TERRE; FEATURE 168
182	C	56	STRUCTURE 2	POSTHOLE	POTEAUX EN TERRE; FEATURE 168
183	C	56	STRUCTURE 2	POSTHOLE	POTEAUX EN TERRE; FEATURE 168
184	C	56	STRUCTURE 2	POSTHOLE	POTEAUX EN TERRE; FEATURE 168
185	C	56	STRUCTURE 2	POSTHOLE	POTEAUX EN TERRE; FEATURE 168
186	C	56	STRUCTURE 2	POSTHOLE	POTEAUX EN TERRE; FEATURE 168
187	C	56	STRUCTURE 2	POSTHOLE	POTEAUX EN TERRE; FEATURE 168
188	C	56	STRUCTURE 2	POSTHOLE	POTEAUX EN TERRE; FEATURE 168
189	C	56	STRUCTURE 2	POSTHOLE	POTEAUX EN TERRE; FEATURE 168
190	C	56	STRUCTURE 2	POSTHOLE	POTEAUX EN TERRE; FEATURE 168
191	C	60	KITCHEN	POSTHOLE	NORTH WALL ; INTACT WOOD
192	C	60	KITCHEN	SILL IMPRESSION	NORTH WALL
193	E	27	N. CISTERN	PIT	
194	E	47	NONE	WELL	ON RIVER BANK
195	C	37	KITCHEN	POSTHOLE	SOUTH WALL
196	C	26	NONE	POSTHOLE	SOUTH OF KITCHEN
197	C	32	KITCHEN	POSTHOLE	WOOD CHIMNEY - NORTH SIDE
198	C	36	KITCHEN	CLAY HEARTH	ASSOCIATED WITH WOOD CHIMNEY
199	C	6	KITCHEN	TRENCH	WOOD CHIMNEY
200	C	6	KITCHEN	TRENCH	WOOD CHIMNEY
201	C	7	KITCHEN	POSTHOLE	SOUTH WALL
202	C	12, 38	KITCHEN	LINEAR STAIN	
203	C	32		STAIN	DELETED
204	C	6	KITCHEN	POSTHOLE	218
205	C	38	KITCHEN	POSTHOLE	SOUTH WALL
206	C	38	KITCHEN	LINEAR STAIN	DELETED
207	C	7	KITCHEN	JOIST STAIN	

Table 4, continued

FEATURE	BLOCK	PROVENIENCE	STRUCTURE	DESCRIPTION	COMM
208	C	37	KITCHEN	JOIST STAIN	
209	C	60		SAME AS F 192	DELETED
210	C	60	KITCHEN	PLANK	CHARRED; SOUTH
211	C	61		SAME AS F 200	DELETED
212	C	37		STAIN	DELETED
213	C	37		STAIN	DELETED
214	C	37		STAIN	DELETED
215	C	62	STRUCTURE 2	POSTHOLE	
216	C	15	KITCHEN	POSTHOLE	SOUTHWEST CORN
217	C	57	KITCHEN	JOIST STAIN	SOUTH WALL
218	C	6	KITCHEN	POSTHOLE	WOOD CHIMNEY
219	C	15	KITCHEN	JOIST STAIN	
220	C	31	KITCHEN	POSTHOLE	SOUTH WALL
221	C	31		POSSIBLE POST	DELETED
222	C	31	KITCHEN	PLANK STAIN	FLOOR
223	C	15	KITCHEN	STAKEHOLE	SOUTHWEST COR[illegible] FEATURE 124
224	C	32	KITCHEN	POSTHOLE	WOOD CHI[illegible]
225	C	61		POSSIBLE PIT	DELETED
226	C	6	KITCHEN	POSTHOLE	WOOD CHIMNEY
227	C	62	STRUCTURE 2	JOIST STAIN	
228	C	61, 62, 64	STRUCTURE 2	DITCH	PARALLELS SOUTH WALL
229	C	13, 32	KITCHEN	POSTHOLE	WOOD CHIMNEY - NORTH SIDE
230	C	48		STAIN	DELETED
231	D	16	SOUTH WING	BRICK PIER	
232	C	63	SOUTH OF KITCHEN	POSTHOLE	SOUTH EXTERIOR
233	C	63	SOUTH OF KITCHEN	TRENCH	SOUTH EXTERIOR
234	C	63	SOUTH OF KITCHEN	POSTHOLE	SOUTH EXTERIOR
235	C	63	SOUTH OF KITCHEN	POSTHOLE	SOUTH EXTERIOR
236	C	63	SOUTH OF KITCHEN	POSTHOLE	SOUTH EXTERIOR
237	C	63	SOUTH OF KITCHEN	POSSIBLE POST	DELETED
238	D	16	SOUTH WING	POSTHOLE	ASSOCIATED WITH FEATURE 231
239	C	63	SOUTH OF KITCHEN	ASH LENS	SOUTH EXTERIOR
240	D	21	SOUTH WING	POSTHOLE	
241	D	28	CORE	DEPRESSION	ASSOCIATED WITH 2ND MIDDEN
242	D	28	CORE	DEPRESSION	ASSOCIATED WITH 2ND MIDDEN
243	C	66		POSSIBLE POST	DELETED
244	D	28		DEPRESSION	DELETED
245	D	28	CORE	POSTHOLE	
246	C	64	STRUCTURE 2	JOIST STAIN	
247	D	24	SOUTH WING	SOIL STAIN	CIRCULAR DEPOSIT
248	D	27, 32	SOUTH WING AND CORE	BEAM	INTACT CEDAR BEAM; EXTERIOR
249	D	27	SOUTH WING AND CORE	POST	INTACT; ASSOCIATED WITH FEATURE 248
250	D	27	SOUTH WING AND CORE	POST	INTACT; ASSOCIATED WITH FEATURE 248
251	E	58	CORE	UNIDENTIFIED CONST	SOIL, MORTAR, LIME, WOOD
252	D	32	SOUTH WING AND CORE	POST	INTACT; ASSOCIATED WITH FEATURE 248
253	E	55		TREE FALL	DELETED
254	D	33	CORE	PLANK	INTACT BUT DECOMPOSED
255	D	33	SOUTH WING AND CORE	POST	INTACT; ASSOCIATED WITH FEATURE 248
256	E	48	CORE	DEPRESSION	UNIDENTIFIED

Table 5. Trenches at Site 16PC62.

TRENCH	COORDINATES	LENGTH/ ORIENTATION	EXCAVATION DATE	DESCRIPTION
1	N184-186 / E128-138	10 m (E-W)	10/28/93	Placement in Block C for investigation of stratigraphic sequence. Artifact density moderate to high.
2	N148-150 / E100-115	15 m (E-W)	10/28/93	Placement in the western portion of Block B for investigation of stratigraphic sequence. Low artifact density.
3	N100-102 / E115-140	25 m (E-W)	10/28/93	Placement at the southern edge of Block A for investigation of stratigraphic sequence. Low artifact density.
4	N172-174 / E128-138	10 m (E-W)	11/2/93	Placement in Block C for investigation of stratigraphic sequence. High artifact density.
5	N295-297 / E111-128	17 m (E-W)	11/19/93	Placement in Block G to investigate areas not covered during Phase II. No cultural material, other than negligible number of brick fragments.
6	N312-314 / E113-128	15 m (E-W)	11/19/93	Placement in Block H to investigate areas not covered during Phase II. No cultural material noted.
7	N342-344 / E98-121	23 m (E-W)	11/22/93	Placement in Block H in alignment with a brick and mortar scatter in the cutbank. Low artifact density.
8	N372-374 / E100-115	15 m (E-W)	11/23/93	Placement in Block J to investigate area between Trenches 3 and 7. A lense of slag and coal, but no artifacts were noted.
9	N322-335 / E111-113	13 m (N-S)	11/23/93	Placement east of Phase II trench to investigate possibility of slave cabin in this location. Phase II trench was encountered at N328. Artifact density very low, comprising small amount of brick rubble and few fragments of iron.
10	N283-285 / E100-130	30 m (E-W)	11/23/93	Placement north of Block F. Artifact density low.
11	N255-285 / E100-102	30 m (N-S)	11/23/93	Placement intended to investigate the possibility of a line of cabins intersecting Block F. Feature 52 located in southern portion of trench. Ceramics, charcoal in association with feature. Artifact density low.
12	N165-195 / E100-102	30 m (N-S)	11/23/93	Placement west of Block C. Very low artifact density.
13	N150-157 / E115-117	7 m (N-S)	12/9/93	Placement southwest of Block C. No cultural materials noted.
14	N152-154 / E117-134	17 m (E-W)	12/9/93	Placement southwest of Block C. No cultural materials noted.
15	N166-181 / E109-111	15 m (N-S)	12/9/93	Placement west of Block C. Brick fragments noted, but no other cultural materials recorded.
16	N350-368 / E109-111	18 m (N-S)	8/31/94	Placement to investigate the possibility of structural features in Block I. Thin lense of coal and slag; low artifact density.
17	N358-360 / E102-109	7 m (E-W)	9/23/94	Placement to investigate the possibility of structural features in Block I. Very low artifact density.

Table 6. List of Site-Wide Analytical Units Assigned to Site 16PC62.

ANALYTICAL UNIT	DESCRIPTION
01	GENERAL SURFACE (SFC)
02	UPPER MIDDEN SURFACE (UMS)
03	NO STRATIGRAPHIC INTEGRITY
04	POST-OCCUPATION DISTURBANCE
05	EARLIEST CONSTRUCTION
06	SECOND CONSTRUCTION PHASE
07	THIRD CONSTRUCTION PHASE
08	OCCUPATION BETWEEN 1820 AND 1850 FLOOD
09	OCCUPATION BETWEEN 1850 FLOOD AND 1890 DESTRUCTION
10	OCCUPATION BETWEEN SECOND AND THIRD CONSTRUCTION
11	FINAL DESTRUCTION OF KITCHEN/OUTBUILDINGS
12	FINAL DESTRUCTION OF MAIN HOUSE
13	1850-1851 FLOOD
14	SUBSOIL
15	REMODELING OF KITCHEN/ BRICK CHIMNEY ADDITION
16	19TH CENTURY FEATURE/ NOT ASSIGNABLE
17	FLOOD PRIOR TO THE 1850-1851 FLOOD
18	FLOOD AFTER THE 1850 - 1851 FLOOD

Table 7. List of Analytical Units Assigned to Block C, Site 16PC62.

BLOCK	ANALYTICAL UNIT	AREA	DESCRIPTION
C	00	ALL	NO LEVEL OR STRATA ASSIGNABLE
C	01	KITCHEN INTERIOR	EARLIEST CONSTRUCTION
C	02	KITCHEN INTERIOR	OCCUPATION DEBRIS ASSOCIATED WITH WOOD CHIMNEY
C	03	EXTERIOR ALL	ALLUVIUM ASSOCIATED WITH 1850-1851 FLOOD
C	04	KITCHEN INTERIOR	RECONSTRUCTION INCLUDING BRICK CHIMNEY AND PLANK FLOOR
C	05	KITCHEN INTERIOR	OCCUPATION DEBRIS ASSOCIATED WITH BRICK CHIMNEY USE
C	06	KITCHEN INTERIOR	FINAL DESTRUCTION
C	07	KITCHEN INTERIOR	POST-DESTRUCTION DEBRIS
C	08	KITCHEN INTERIOR	DESTRUCTION OF WOOD CHIMNEY
C	09	KITCHEN INTERIOR	SILL FILL - UNDIFFERENTIATED
C	10	EXTERIOR ALL	EARLIEST OCCUPATION DEBRIS
C	11	EXTERIOR ALL	OCCUPATION DEBRIS BETWEEN FLOOD AND DESTRUCTION
C	12	KITCHEN EXTERIOR	POST-OCCUPATION DEPOSIT
C	13	KITCHEN EXTERIOR	REDEPOSITED MIDDEN
C	14	ALL	STERILE SUBSOIL
C	15	KITCHEN EXTERIOR	LATE OCCUPATION SURFACE-ASSOCIATED WITH SEQUENCE 11
C	16	STRUCTURE 2 INTERIOR	OCCUPATION DEBRIS BETWEEN FLOOD AND DESTRUCTION
C	17	STRUCTURE 2 INTERIOR	ALLUVIUM ASSOCIATED WITH 1850-1851 FLOOD
C	18	STRUCTURE 2 INTERIOR	EARLIEST OCCUPATION
C	19	STRUCTURE 2 INTERIOR	INITIAL CONSTRUCTION
C	20	STRUCTURE 2 INTERIOR	SILL FILL - UNDIFFERENTIATED
C	21	KITCHEN EXTERIOR	19TH CENTURY/NOT ASSIGNABLE
C	22	ALL	GENERAL LATE MIDDEN SURFACE
C	23	TRENCH 1	NO STRATIGRAPHIC ASSIGNMENT
C	24	TRENCH 4	NO STRATIGRAPHIC ASSIGNMENT
C	25	ALL	GENERAL SURFACE COLLECTION

Table 8. List of Analytical Units Assigned to Block D, Site 16PC62.

BLOCK	ANALYTICAL UNITS	AREA	DESCRIPTION
D	01	ALL	GENERAL SURFACE
D	02	ALL	TOP OF LATEST OCCUPATION SURFACE
D	03	ALL	NO STRATIGRAPHIC INTEGRITY
D	04	ALL	POST-OCCUPATION DISTURBANCE
D	05	SOUTH WING/CORE	LAST OCCUPATION DEBRIS
D	06	SOUTH WING/CORE	POST 1850-1851 FLOOD CONSTRUCTION
D	07	SOUTH WING/CORE	FLOOD OF 1850-1851
D	08	SOUTH WING/CORE	OCCUPATION DEBRIS FROM CONSTRUCTION OF SOUTH WING -1851 FLOOD
D	09	CORE	OCCUPATION DEBRIS FROM INITIAL CORE CONSTRUCTION TO WING CONSTRUCTION
D	10	SOUTH WING/CORE	OCCUPATION DEBRIS FROM INITIAL CORE CONSTRUCTION TO ;51 FLOOD
D	12	SOUTH WING/CORE	FINAL DESTRUCTION DEBRIS
D	13	ALL	FLOOD PRIOR TO 1850 - 1851
D	14	ALL	STERILE
D	15	SOUTH WING	INITIAL CONSTRUCTION OF SOUTH WING
D	16	CORE	INITIAL CONSTRUCTION OF CORE

Table 9. List of Analytical Units Assigned to Block E, Site 16PC62.

BLOCK	ANALYTICAL UNITS	AREA	DESCRIPTION
E	01	ALL	GENERAL SURFACE
E	02	ALL	TOP OF LATEST OCCUPATION SURFACE
E	03	ALL	NO STRATIGRAPHIC INTEGRITY
E	04	ALL	POST-OCCUPATION DISTURBANCE
E	05	CORE	INITIAL CONSTRUCTION OF CORE
E	06	NORTH WING	INITIAL CONSTRUCTION OF NORTH WING
E	07	ALL	FLOOD OF 1850-1851
E	08	CORE	EARLIEST OCCUPATION DEBRIS
E	09	NORTH WING/CORE	LATEST OCCUPATION DEBRIS - UPPER MIDDEN
E	10	NORTH WING/CORE	GENERAL 19TH CENTURY OCCUPATION DEBRIS
E	11	NORTH WING/CORE	DESTRUCTION DEBRIS
E	12	NORTH WING/CORE	POST DESTRUCTION SHEET MIDDEN
E	13	NORTH WING/CORE	CONSTRUCTION/REPAIRS BETWEEN INITIAL CORE CONSTRUCTION AND FLOOD OF 1850-1851
E	14	NORTH WING/CORE	CONSTRUCTION/REPAIRS BETWEEN FLOOD OF 1850-1851 TO FINAL DESTRUCTION
E	15	CORE	OCCUPATION DEBRIS BETWEEN INITIAL CORE CONSTRUCTION TO FLOOD OF 1850-1851- "RED" MIDDEN
E	16	NORTH WING	OCCUPATION DEBRIS ASSOCIATED WITH FIREPLACE (F66)
E	17	ALL	FLOOD AFTER 1850-1851
E	18	CORE	CONSTRUCTION IN 1840'S

Table 10. Functional Typology Used for Nina Plantation Analysis.

FUNCTIONAL TYPOLOGY CODE	FUNCTIONAL TYPOLOGY CLASS	EXAMPLES OF CLASS
1	Non-Agricultural Food Procurement	Firearms; Ammunition; Traps
2	Food Consumption	Plates; Glass Tableware; Eating Utensils
3	Food Preparation	Large Ceramic Bowls; Stove Parts; Skillets
4	Food Storage	Metal Cans; Ceramic and Glass Jars; Crocks
5	Lighting	Lamp Parts; Candlesticks
6	Furniture	Spittoons; Mirrors; Vases
7	Architectural	Brick; Window Glass
8	Construction Hardware	Nails; Bolts; Nuts
9	Construction Tools	Hammer; Chisel
10	Household Tools/Implements	Scissors; Buckets; Axes
11	Agricultural Tools/Implements	Hoes; Chain; Equine Tacks
12	Security	Locks; Keys; Firearms
13	Personal Clothing	Buttons; Buckles; Shoes
14	Personal Adornment	Beads; Jewelry; Hairpins
15	Toys/Games	Doll Parts; Dominos; Marbles
16	Music	Musical Instrument Parts; Victrola
17	Spiritual/Ideological	Religious Medals; Witch Bottle; Bible Clasp
18	Hygiene	Chamber Pots; Combs; Toothbrushes
19	Currency	Coins
20	Medicine	Medicine Bottles; Syringes
21	Personal	Tobacco Pipes; Eye Glasses; Figurines

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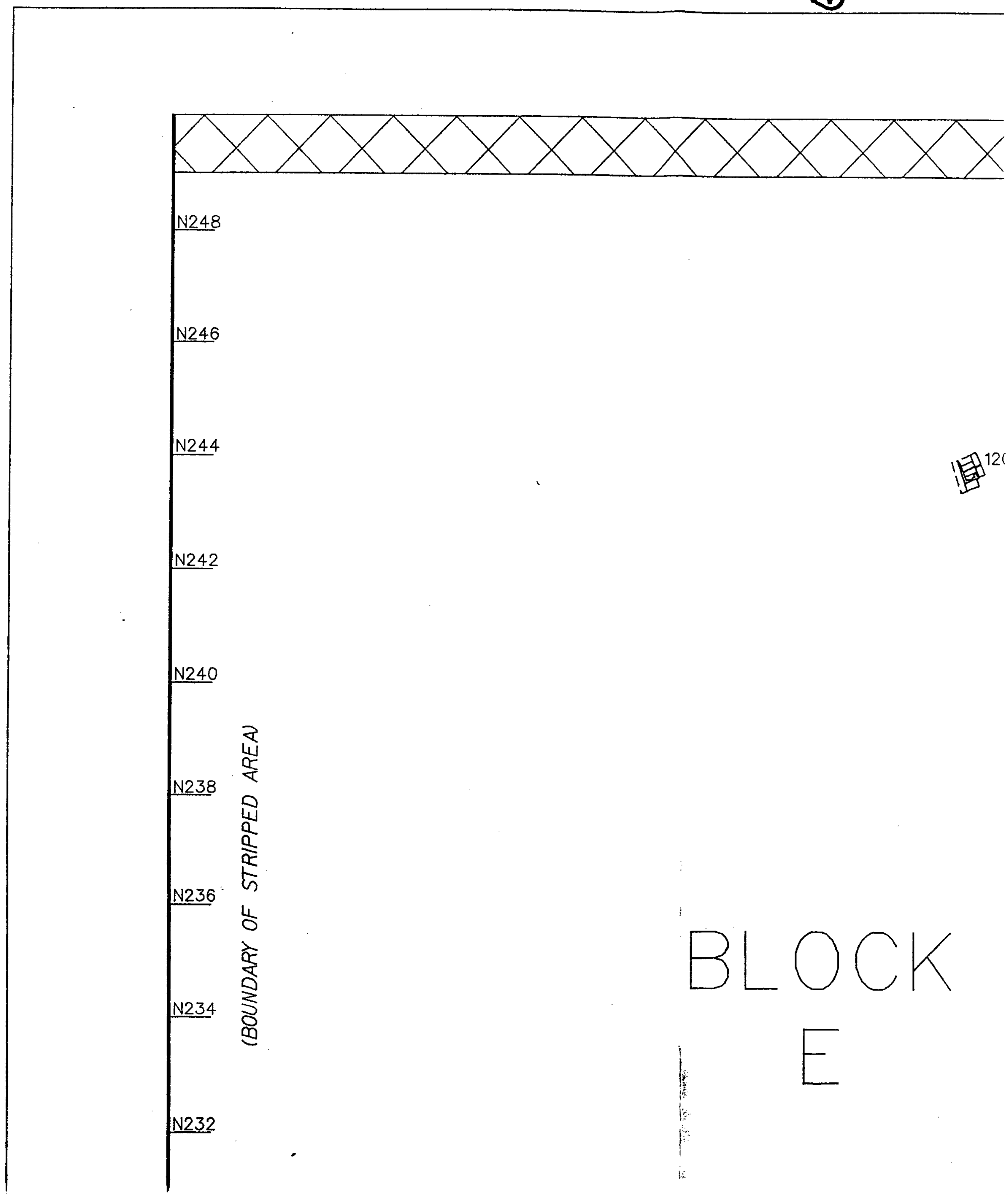
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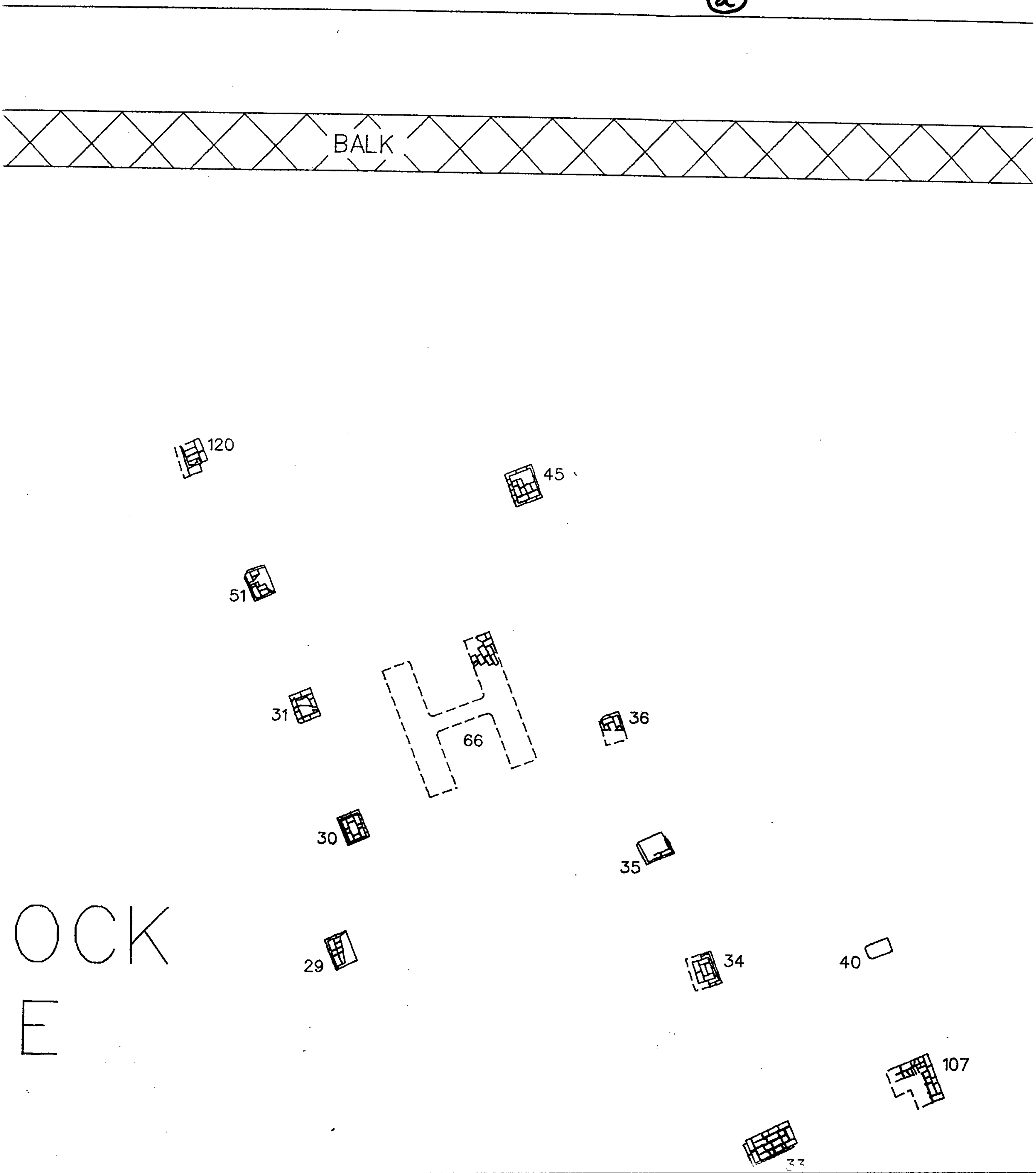

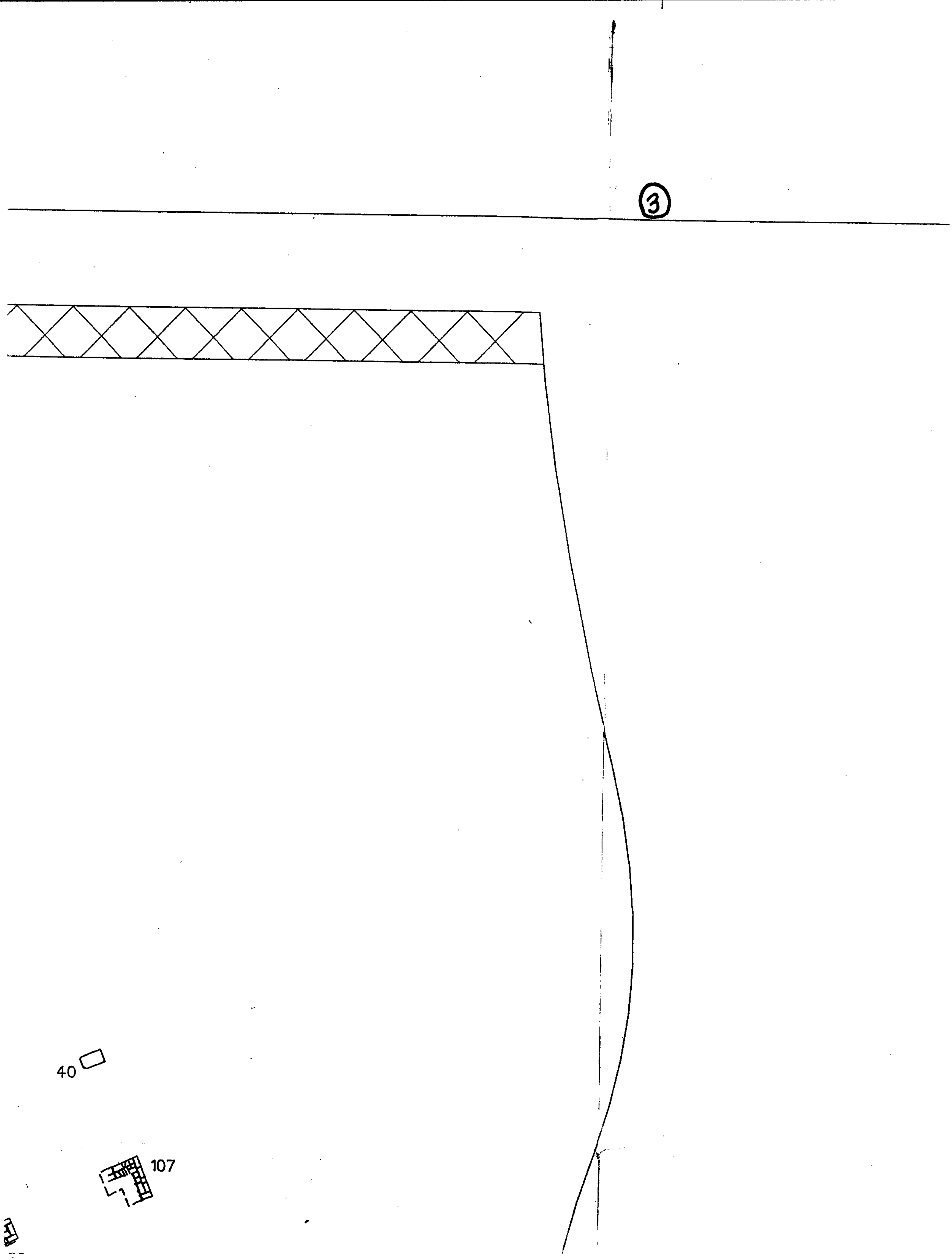
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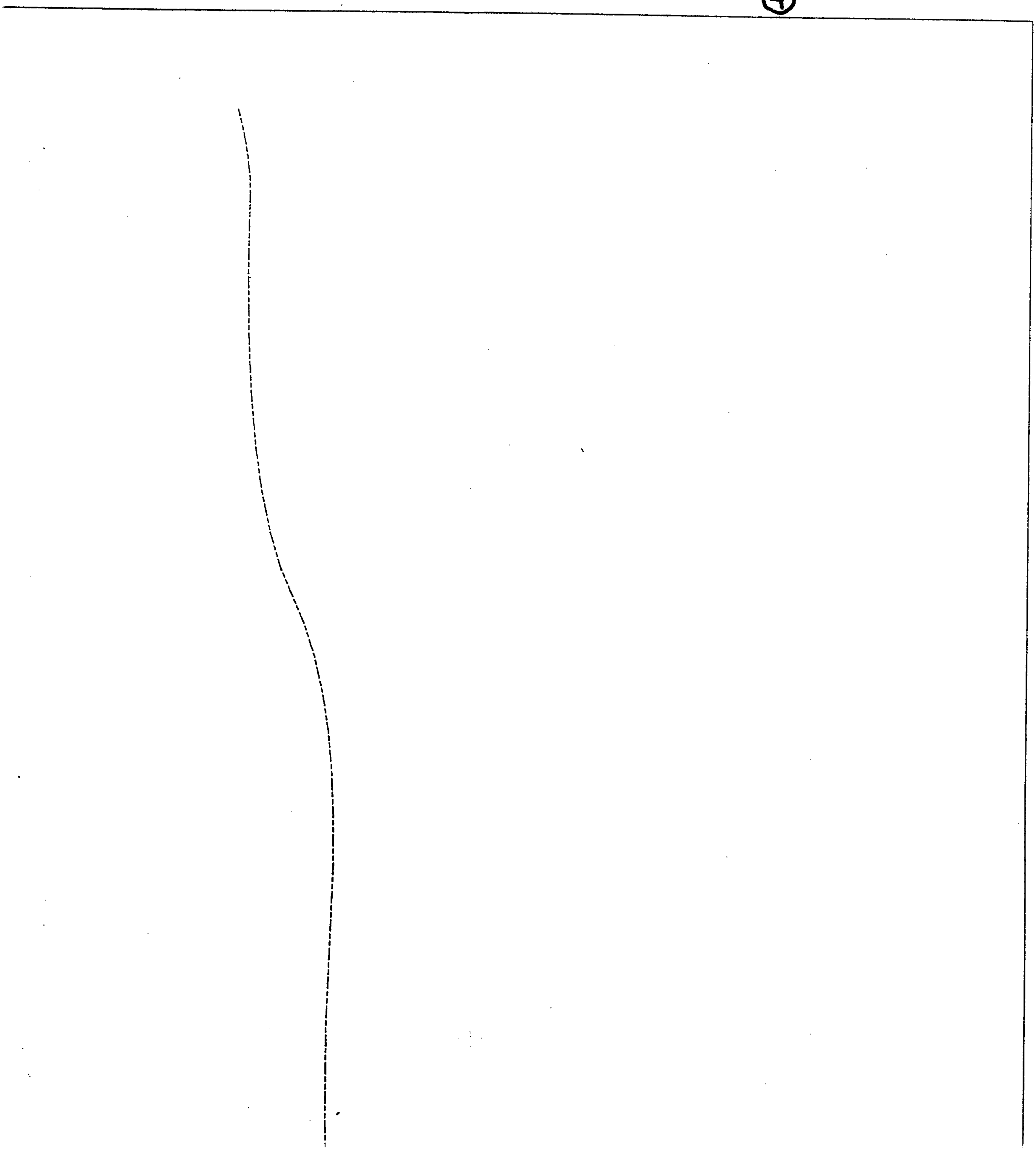

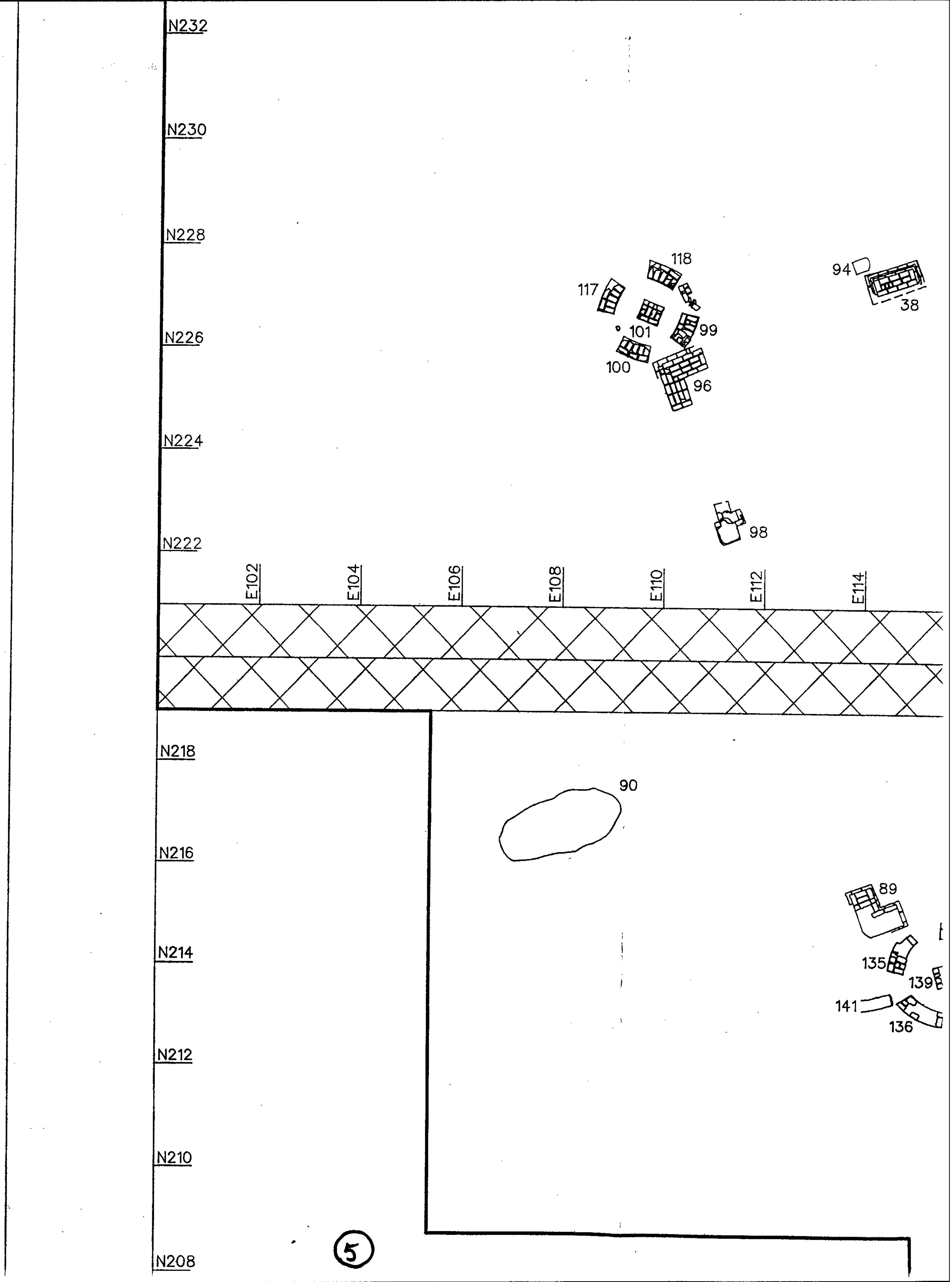
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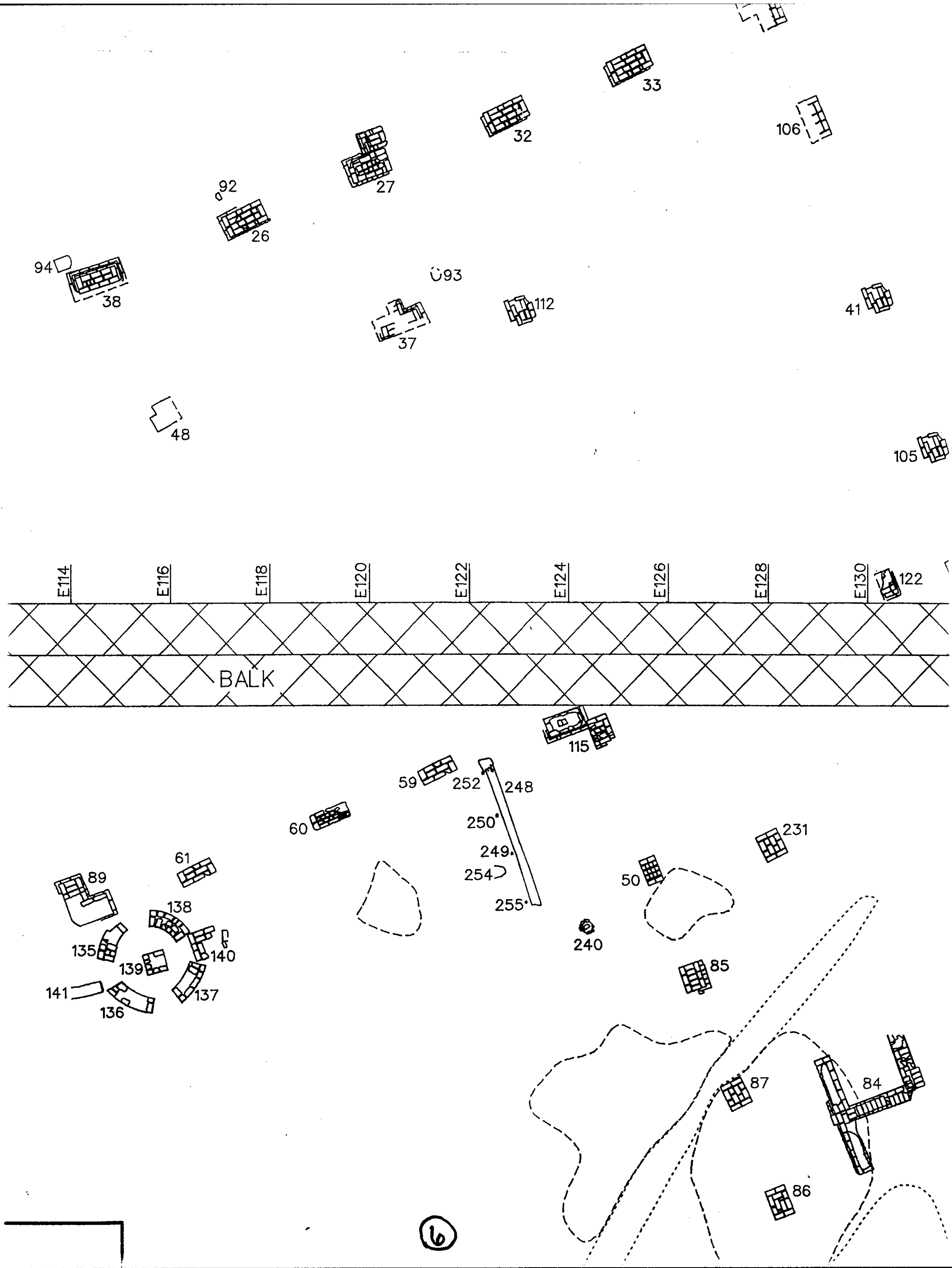
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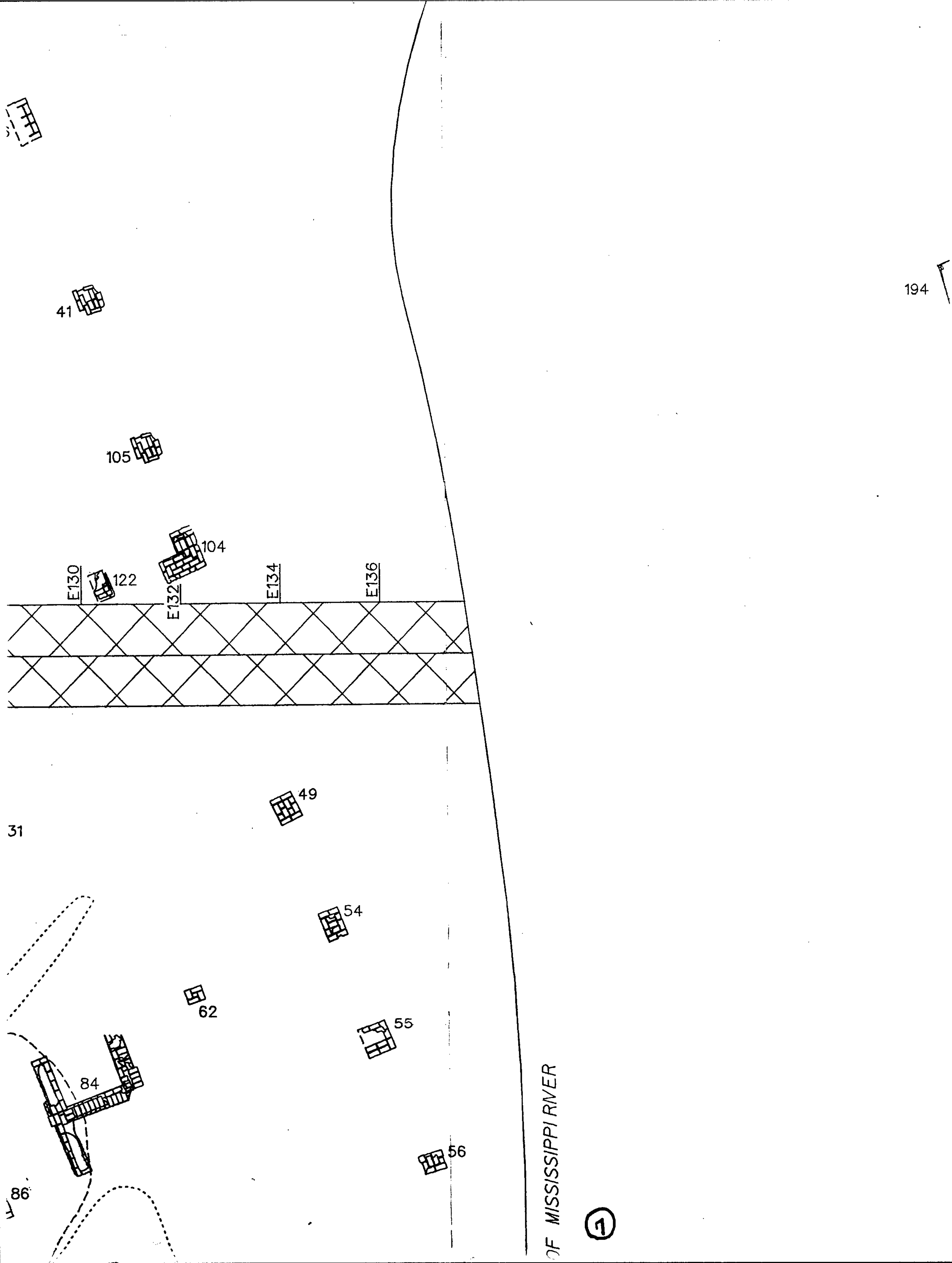

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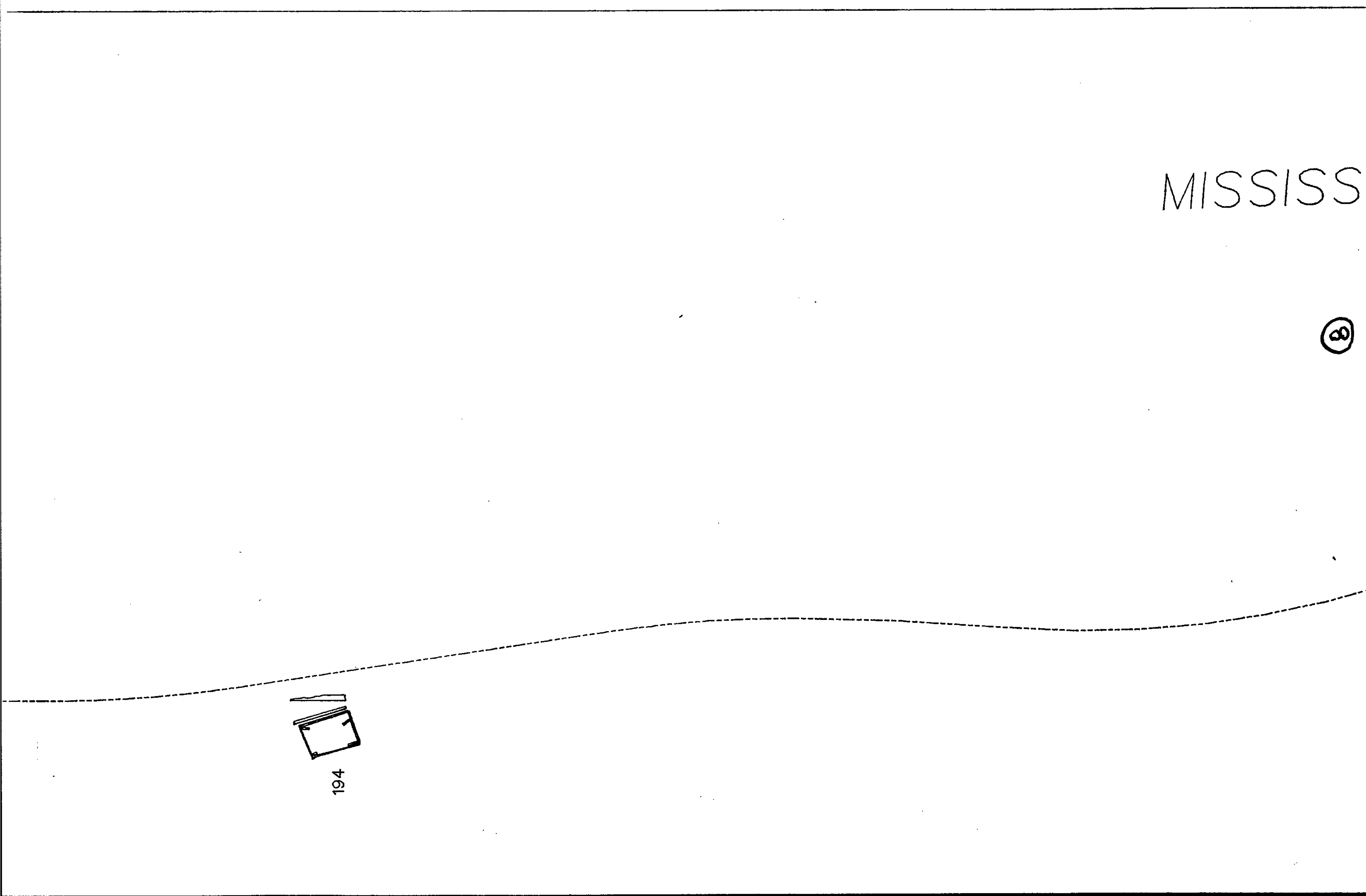
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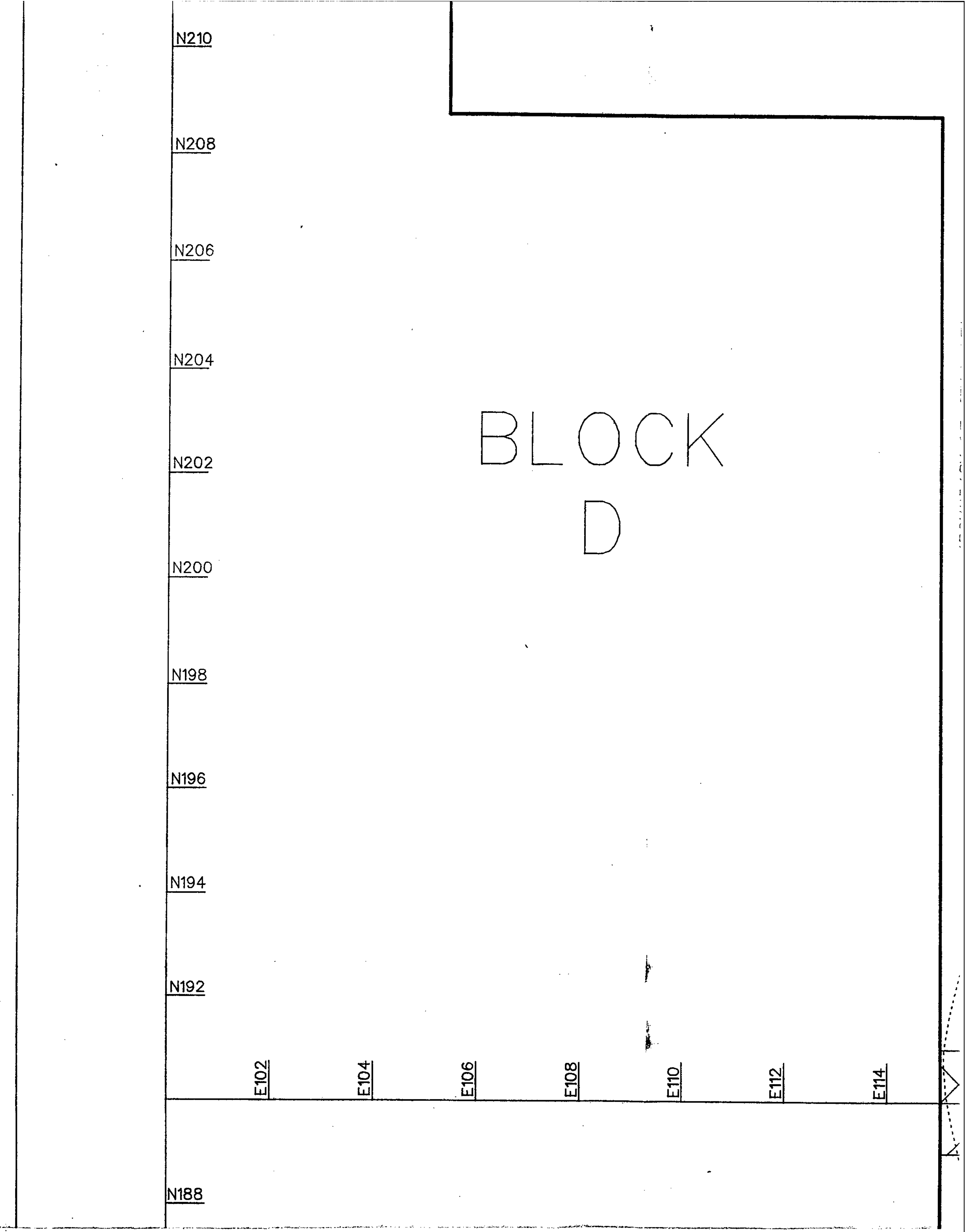
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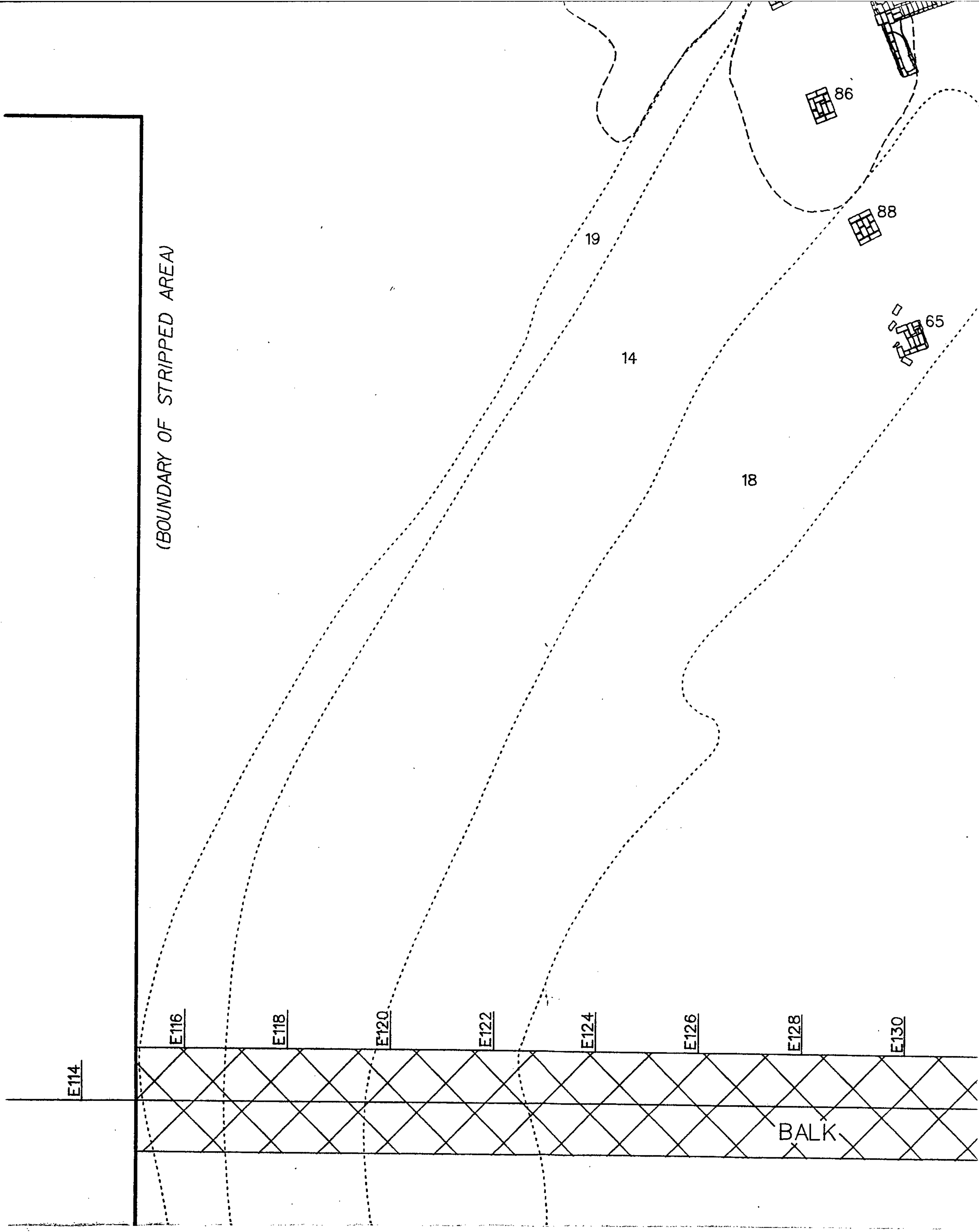
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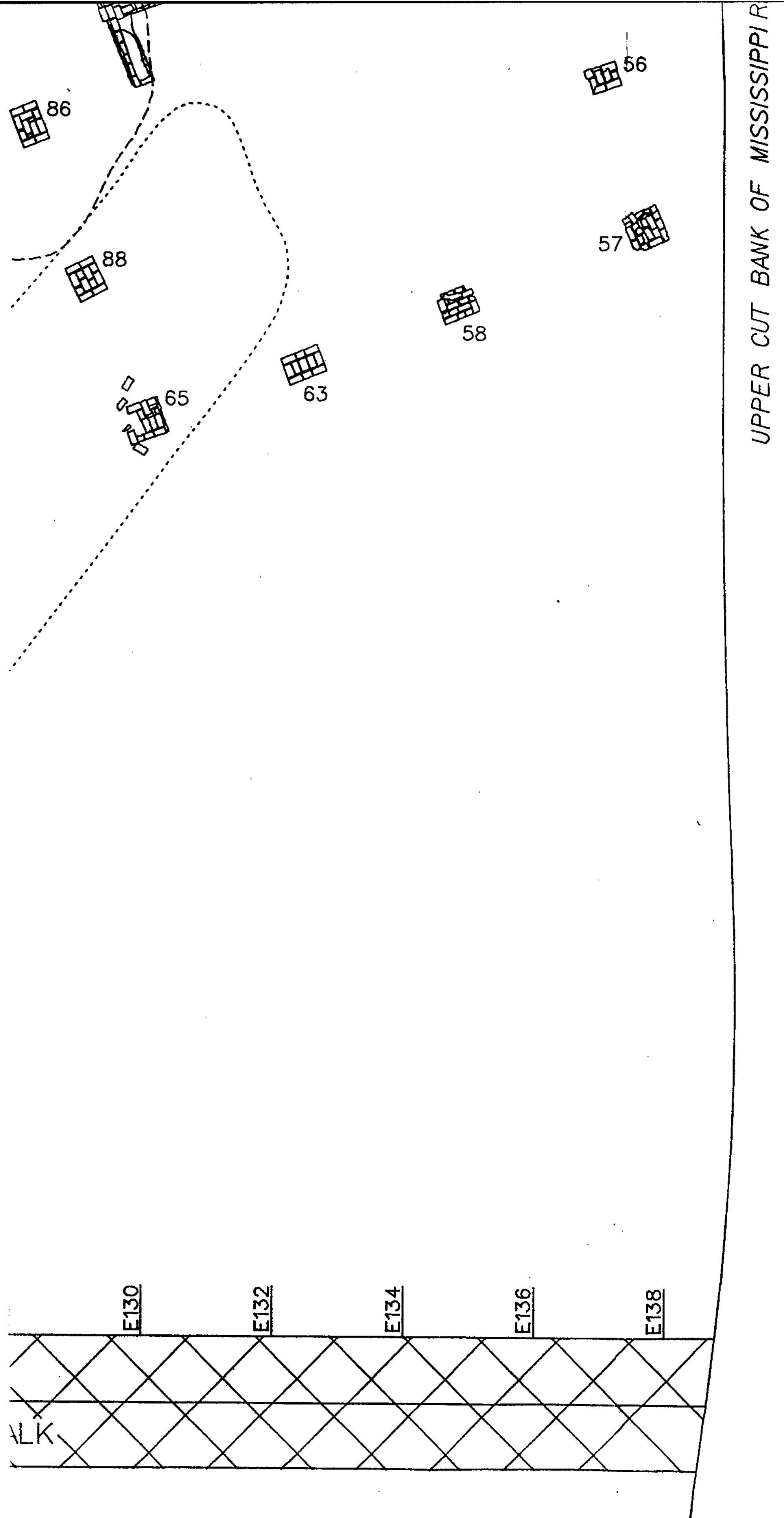
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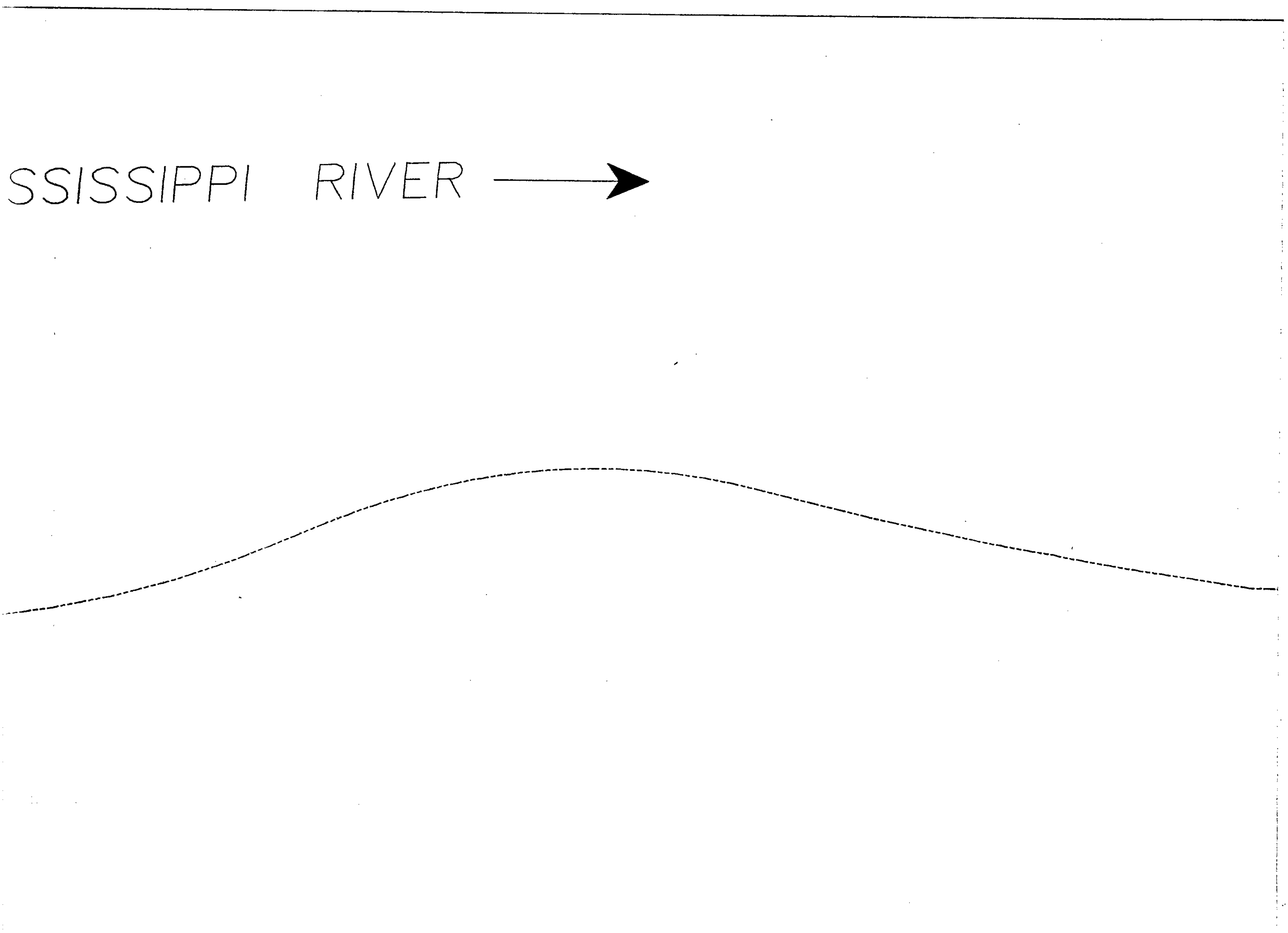
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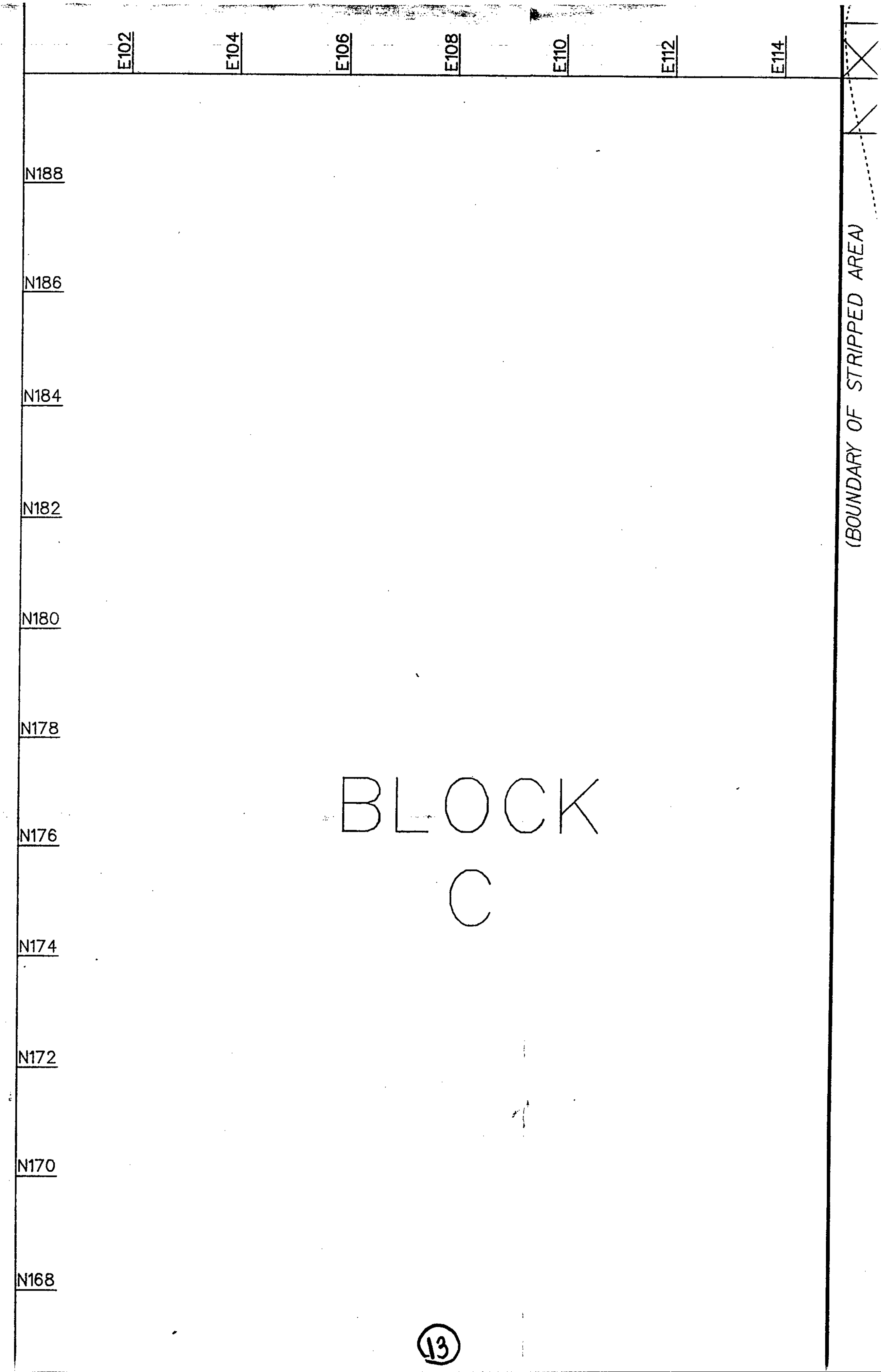
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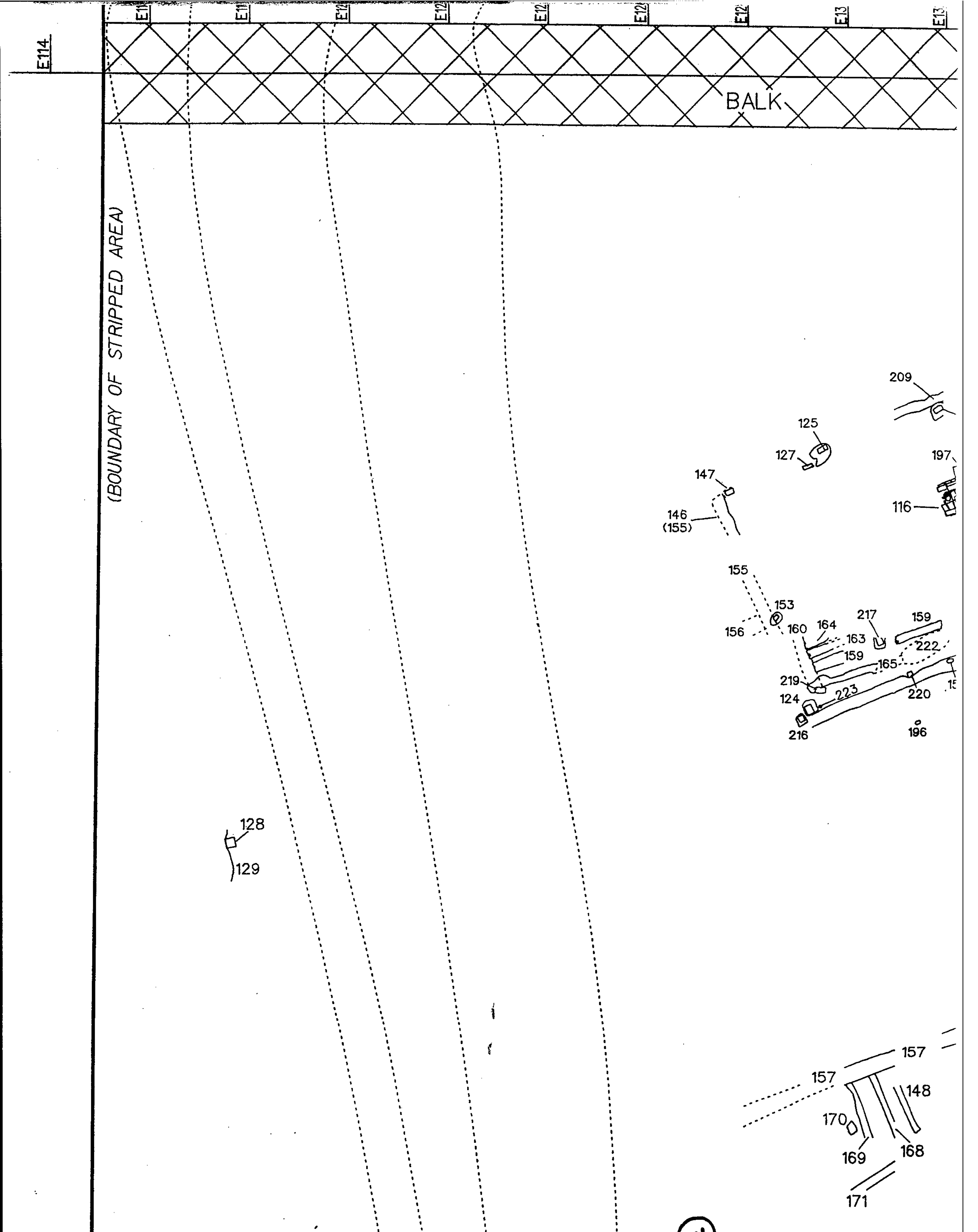
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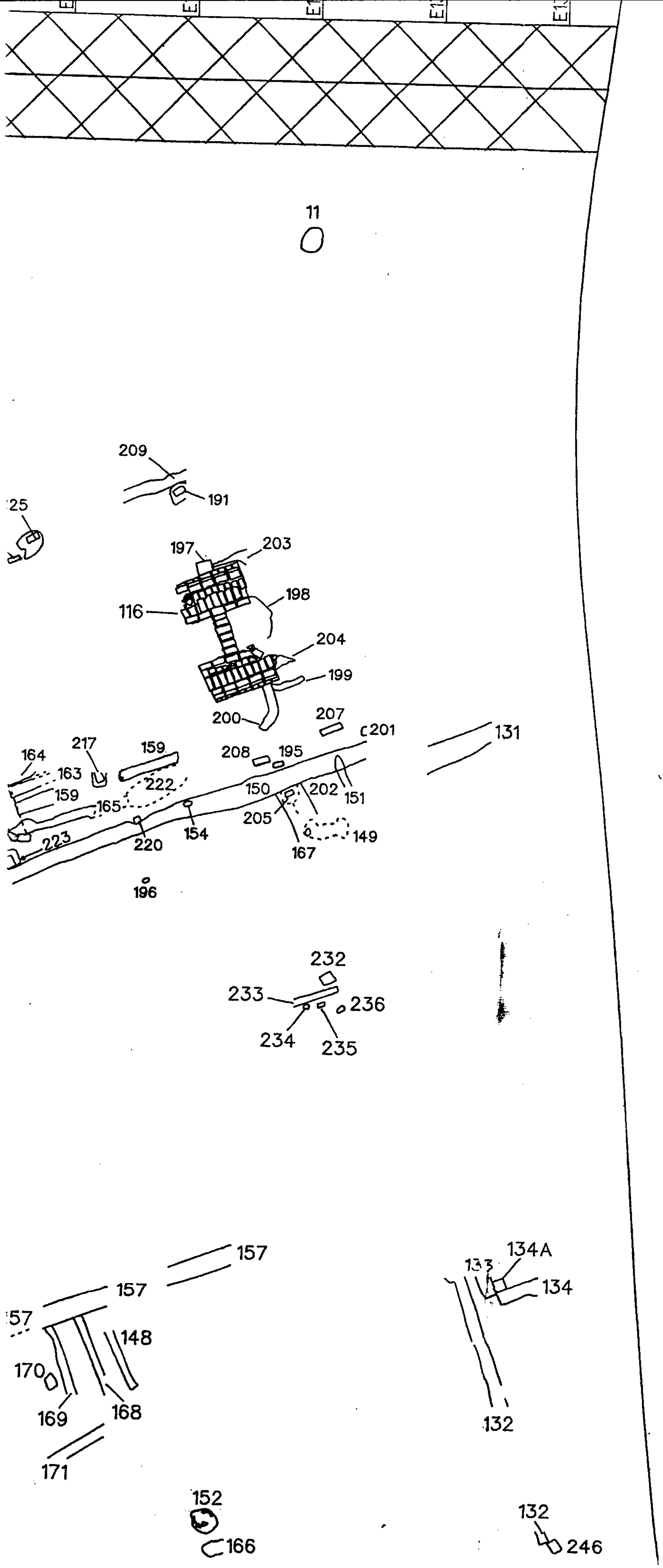
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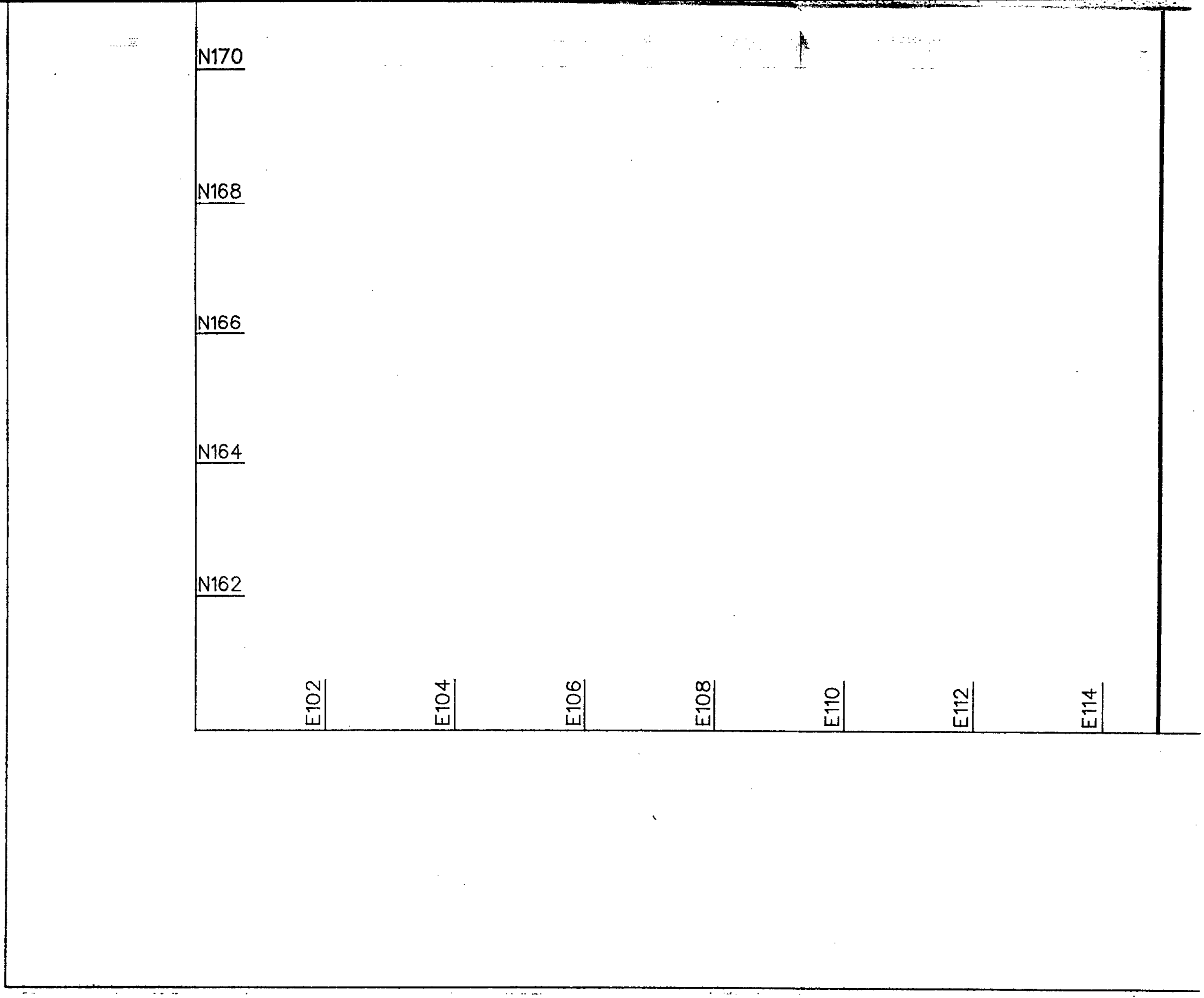
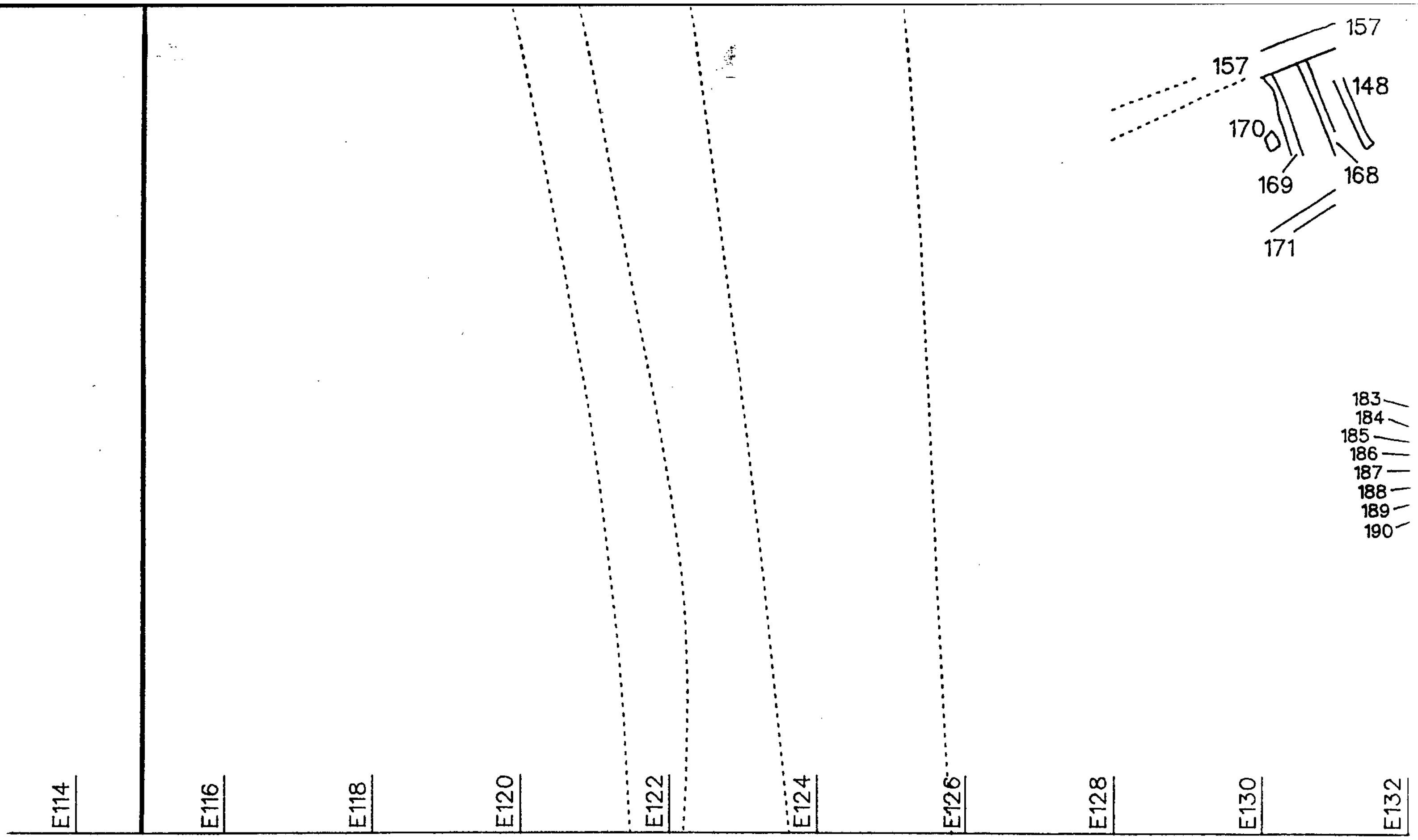


Figure 70. Plan of all features identified during Phase III excavations at Nina Plantation.

17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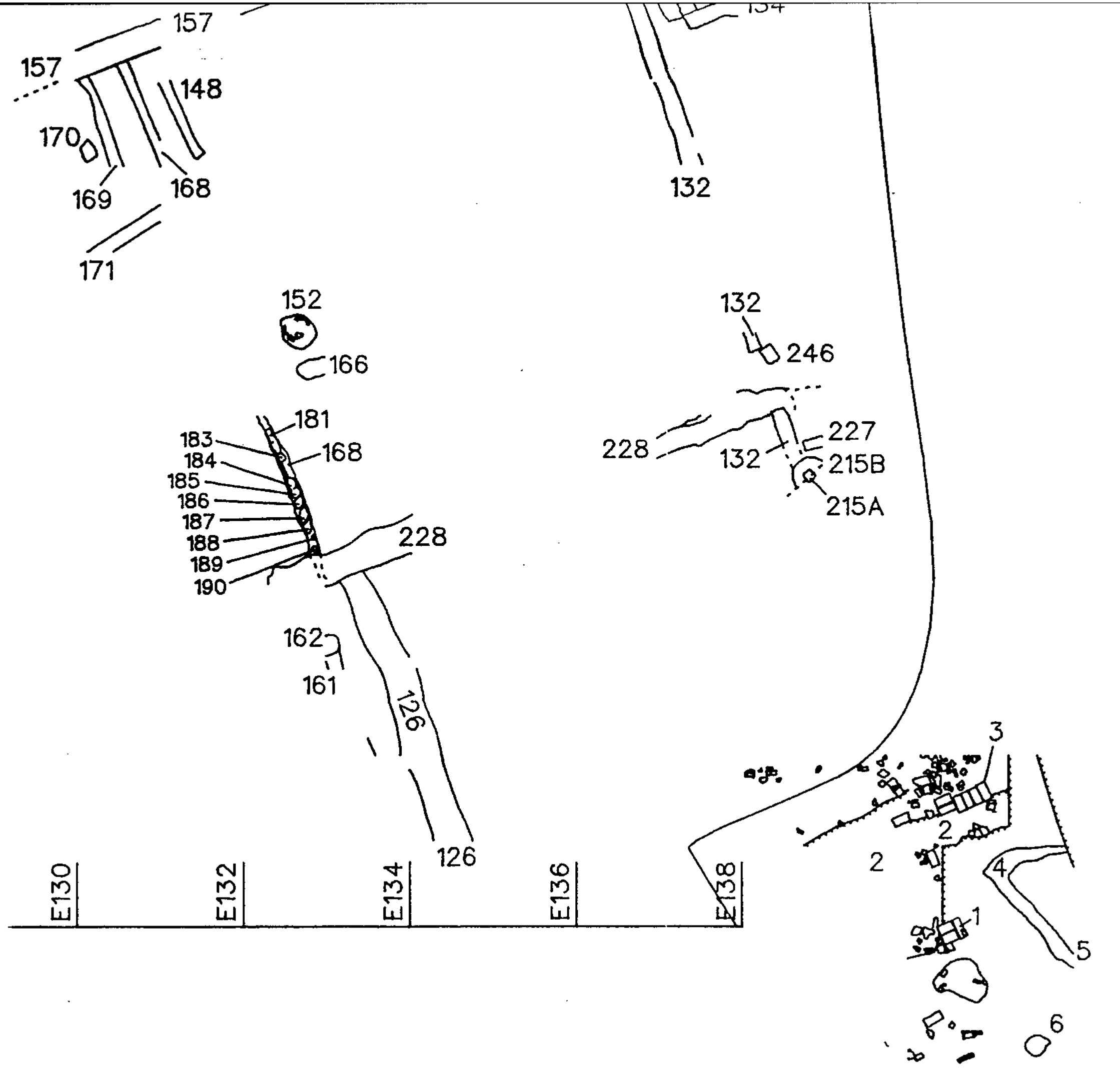
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